TECHNOLOGY DEPT.

First Copy

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

Vol. 14. No. 1822 — Entered as second-class matter Aug. 27, 1925, Post Office, N. Y., N. Y. Under Act of March 3, 1879 — NEW YORK, SATURDAY, SEPTEMBER 24, 1932 — 5 Cents. $12 Per Year.

Industrial Leaders Expect Shrinkage of 15,000 Units In Dealer Stocks in Sept.

Production Estimated at About 75,000 With Sales Expected to Run Nearly 90,000 Units Throughout Country

Detroit, Sept. 23. — The best informed opinion here leans to the conclusion that September will see another important decrease in the volume of dealer stocks of new cars.

Automotive Daily News at the beginning of September estimated dealer stocks at about 190,000 units. The spurt in sales which occurred during the latter half of August, with a curtailment in production, accounted for a reduction of some 17,000 units from the total on hand at the beginning of August.

The sales spurt that began in the final two weeks of August has continued into September. Chevrolet, for instance, was compelled to increase its production schedule on the present series. Sales executives here express the belief that the total production for September will not exceed 75,000 vehicle units. On the other hand, they believe that total sales for September will run to at least 90,000. This would give us another reduction of 15,000 units in dealer stocks and would put the total on hand October 1, somewhere in the neighborhood of 175,000 units.

One fact is perfectly apparent, regardless of the definite accuracy of the estimates on production and sales: dealers will go into 1933 with the lowest stock of the preceding year's cars that they ever have carried over. This factor of carrying over the previous year's models to be sold in the spring market has always been a serious matter with the retail automobile merchants. Not only have they been forced to take a lower price for their "last year's wares," but the sale of these in competition with the new models has been a serious handicap in getting the most out of the active buying season and cashing in to the fullest on the impetus given by the new offerings of the vehicle manufacturers. There will be a minimum of this trouble in the spring of 1933.

MOTOR TRADES PICK UP IN MEMPHIS AREA

Memphis, Tenn., Sept. 23.—The first part of September and all of August showed a gradual increase in sales along Automobile Row over the mid-summer period. Accessory, tire and battery concerns are more active. The harvest season being on, there are more trips to be made by city folk to neighboring plantations. Also, there are more trucks and commercial vehicles needed.

Fall merchandise is moving well and the mercantile places in some cases are increasing their usual fleets. While cotton fell off a little the past week, advices from west Tennessee cotton counties is that the crop will be much below last estimated cut, 211,000 bales below 1931 in west Tennessee. The rainy season is yet to start, industries textile are active and confidence prevails for good prices of this staple and accordingly better business.

Lumber, after two years of dullness, shows better values and demand, especially export orders. Hard woods are a dominant staple in this section, this being the largest hard wood market in the world.

FOREIGN CAR SHOWS THIS YEAR TO OFFER LATEST NOVELTIES

Detroit, Sept. 23.—There is unusual interest this year being shown in the two big foreign automobile shows. It is felt here that both the Paris Salon, October 6-16, and the Olympia show in London, October 13-22, wil disclose a number of interesting developments.

The Paris show, it is reported, will give us some new ideas in color combinations and upholstery. Some new body designs are expected, but these are not likely to be as startling as had at first been reported.

There is good reason to believe that the London show will disclose two or three new fluid clutch designs, that type of construction having been well received in Britain during the past year. There are also likely to be some new ideas in streamlined body design, and this may also be a feature of the Paris Salon.

A number of American engineers and other executives are now abroad, and most of them are planning to stay long enough to inspect the new offerings of the other two chief producing countries. The London show, it is known, will present at least two and probably more new small cars falling in the midget class.

NO CURTAILMENT IN RUBBER OUTPUT

New York, Sept. 23.—The outlook is for continued production of crude rubber in the Far East, with the certainty that it will exceed the world's absorptive capacity for a long time to come, it was said yesterday by Louis V. Keeler, crude rubber factor, who has just returned from a journey of several months to British Malaya and the Dutch East Indies.

Mr. Keeler left Penang in August, when rubber prices were beginning to rise, and said that it had been the hope of rubber interests in the Far East that the commodity would remain for some time between 2½ cents and 3 cents a pound, levels which would either reduce output or hold them in check. The recent price decline discouraged native, but not estate, production.

The rise which followed, however, will only encourage both native and European-owned estates, to increase their tapping, Mr. Keeler contends, as producing costs have been ruthlessly slashed in order to obtain lower "all-in" costs on estate production. Some of the European plantation companies operating in Malaya have dispensed with almost one-half of their managerial staffs, and gone as far as to select only laborers who are highly efficient in

(Continued on Page 2)

Continental Announcement, Chevrolet Gains Stir Detroit

Many Other Plants Report General Improvement In Outlook; Ford Output Estimated At 1,500 Daily

By CHRIS SINSABAUGH

Detroit, Sept. 23.—Continental Motors officially announcing it will introduce an entirely new line of low-priced cars, and Chevrolet confirming A. P. Sloan's New York statement that September production is being increased 10,000 units over the original schedule because of the very decided improvement in sales—two important news stories that have stirred the motor capital this week.

President W. R. Angell it is who makes the positive declaration as to Continental Motors' proposed expansion and that the new job will be separate and distinct from Continental-De Vaux. It is expected that it will be in direct competition with Chevrolet, Plymouth and Ford, and it is predicted that the price will be under all three; in fact, it is said it will be the lowest priced full-sized automobile on the American market.

No mechanical details are given. President Angell says that the Continental-De Vaux, in its field, will be continued and that distributing organizations and merchandising plans for handling both lines are now being aggressively developed.

"We feel there never has been a time so opportune as the present to develop and market a new conception of motor car values," declares President Angell. "Our engineering staff has been working day and night on this project, bringing to it experience and knowledge gathered during thirty years of engine building. Our plants at Detroit, Grand Rapids and Mushegon are capable of prducing the complete vehicle as economically if not more so than any other company in the industry.

"Unhampered by considerations of precedent or established custom, we feel that in the development of our merchandising policy we are in a position to offer the distributing organization and motoring public new and substantial advantages not possible with other companies. We are starting out with a clean slate. Our aim is to offer a new, up-to-date product of unusual merit, with eye appeal, comfortable riding qualities

(Continued on Page 7)

METROPOLITAN S. A. E. OPENS NEW SEASON; HEARS SEVERAL TALKS

New York, Sept. 23.—The Metropolitan Section of the Society of Automotive Engineers inaugurated its 1932-1933 season last night at the Hotel New Yorker.. William B. Stout, president Stout Engineering Laboratories, Inc., Dearborn, Mich., was the principal speaker and had for his subject, "What Aviation Can Do for Motor Cars."

Automobile designers have gotten into certain ruts, Mr. Stout stated, and the engineer has, perhaps, the greatest opportunity which the industry has yet afforded to sell new ideas.

We must get new ideas, materials and romance into the product in order to sell automobiles, continued Mr. Stout. He cited as an example the demands of the automobile manufacturers for a quick-drying paint when the popularity for closed cars grew to such an extent as to tax the facilities of the automobile manufacturers. When the problem was referred to a committee of the paint manufacturers they reported back, the speaker stated, that "Paint was as good as could be made and couldn't be better," but looking into the airplane field, chemists developed present-day automobile lacquers from airplane dope used for covering airplane fabrics.

One fallacy, he said, which is current is that roadability and riding quality are improved as car weight is increased. This is not true, Mr. Stout declared. While Pullman car operators pointed with pride to the ninety-ton cars used in railway service as a requirement for good riding qualities at high speed, in Ireland and England railway cars weighing 15,000 pounds provide comfortable riding at speeds of seventy miles per hour. Weights can be reduced considerably and riding quality improved by careful design.

By borrowing from airplane practice the structural design of the body and chassis can be considerably improved, Mr. Stout stated. The present layout of the passenger compartment is not efficient, since so much of the wheelbase is used for

(Continued on Page 7)

GRAND RAPIDS LOSES RIGHT TO REGULATE INTERCITY CARRIERS

Grand Rapids, Mich., Sept. 23.—Attempts of the city of Grand Rapids to regulate and license inter-city common carrier buses by city ordinance were declared invalid by the State Supreme Court at Lansing.

The court ruled that cities may not regulate common carrier vehicles except in matters affecting their operation within city limits.

Under its common carrier law, the Supreme Court decided that the state has undertaken the regulation of such vehicles and that cities attempting by ordinance to do so are "invading the field of control already undertaken by the state."

Regulations of the Grand Rapids ordinance would affect operation of buses outside the city as well as within city limits and the measure was thus invalid, the court decided.

COURTNEY JOHNSON FINDS IMPROVED OUTLOOK IN WEST

Denver, Col., Sept. 23.—Business conditions all over the country are showing material improvement, particularly in the Rocky Mountain area, according to Courtney Johnson, assistant general sales manager of the Buick, Oldsmobile and Pontiac Sales Company of Detroit, who attended the meeting of salesmen representing Colorado, Utah, Wyoming, Kansas and Nebraska held in this city recently.

"The automotive business is improving, and August business was much greater than July, which is not usually the case," Johnson said. "In all lines of trade I find a much better feeling of optimism, and that means much, because mental revival must precede material revival. Confidence is being restored in twenty states that I have covered on my tour to the Pacific Coast and back. In the Rocky Mountain area depression did not hit so hard as in other areas, and right now this mountain territory is coming to the front in a remarkable degree."

Business in the Denver district

(Continued on Page 7)

WISCONSIN TAXES MAY FORCE REMOVAL OF WISCONSIN AXLE

Oshkosh, Wis., Sept. 23.—Whether or not the Wisconsin Axle Company, subsidiary of the Timken Detroit Axle Company, will move from this city depends upon the future Wisconsin tax policy, according to an announcement by Fred Glover, president of the Detroit concern.

It was explained by Mr. Glover that when the Oshkosh plant was purchased the original intention was to send a large part of their business to this city, but that this program was not carried out because the high Wisconsin income tax discouraged this policy. The plant in normal times employs approximately 300 men.

At Janesville the last Chevrolet automobiles were produced September 17, and the Chevrolet and Fisher Body plants are practically at a standstill because of the unfavorable tax situation. E. L. Wright, plant manager, remains in Janesville in charge of the company's property. The affairs of the Modern Housing Corporation, a subsidiary of General Motors, is in the hands of L. A. Markham. The Chevrolet sales organization is expected to be kept intact, with P. A. Jerrue as sales manager, this division operating independently of the assembly plant.

N. J. STANDARD CUTS GASOLINE PRICES IN SEVEN STATES

Newark, N. J., Sept. 23.—Effective today, reductions of 2 1-5 to 3 1-5 cents a gallon in bulk and retail prices of gasoline throughout its territory have been made by Standard Oil Company of New Jersey.

The tank wagon and service station prices throughout its marketing area, with the exception of New Jersey, were reduced 3 1-5 cents a gallon. In New Jersey the price was cut 2 1-5 cents. The marketing territory embraces New Jersey, Virginia, West Virginia, Maryland, District of Columbia, North and South Carolina.

The price of tanker car Standard gasoline, spot, has been reduced to 6 cents a gallon, f. o. b. seaboard, while the same gasoline in tank cars under contracts is ½ cent less than this price. United States motor gasoline under 65 octane, for spot shipments to consumers only, is 5¼ cents a gallon f. o. b. seaboard. The former prices were 8¼ to 8¾ cents.

General Business Gains Spur Lincoln (Neb.) Dealers

Lincoln, Neb., Sept. 23.—Dealers in new cars and trucks in Lincoln and Omaha with very few exceptions are looking forward to an improvement in sales for the remainder of 1932, despite the fact that the normal seasonal trend would indicate otherwise. Most dealers base their optimism on materially improved business so far in August and, although this spurt in sales may be only a flash in the pan, there is a general feeling that business is starting to turn upward on a sound basis.

All dealers in Nebraska agree that prices for farm products must improve if the automotive business is to catch its stride. Present indications are favorable to an increased rural buying power what with the recent upward trend in live stock prices. Apparently the law of supply and demand is reasserting itself and the demand may reasonably be expected to bring higher markets this winter season. If prices for crops and live stock continue to improve the automotive business in the farm states will benefit immediately.

Dealers handling the passenger car lines selling below $1,000 are more or less disappointed with new car sales for the first seven months of the year, although the service end of their business has held up in fine shape. There is no indication or likelihood that these dealers will "give up the ship," however, and most of the medium-priced car dealers are quite optimistic over the outlook for sales in their price class this fall.

Truck sales have been as hard or harder hit than passenger car sales, with the farmer doing practically no buying and showing a tendency to go back to horse flesh for motive power. Fleet operators too are putting off replacing their old equipment as long as possible, but an improvement in farm prices doubtlessly will have an immediate beneficial effect on truck sales. When economic conditions do allow the farmers and the fleet operators to spend money on new equipment, the truck dealers are certain to do a rushing business for the first few months at least.

"We are pleased with the present outlook for new car sales, what with our sales for the first two weeks of August being ahead of sales for the entire month of July," said Fred Sidles, president of the Lincoln Buick & Cadillac Auto Company. "More people are visiting our show room this month than for several months and a spirit of optimism that has been sadly lacking for months on end is becoming prevalent. Used car sales which were just fair in July were dull during the first two weeks of August, but any falling down in this department was more than made up by increased new car sales. Our service department has done remarkably well all year, and, everything considered, I see no reason why we are not in for a fair volume of business in all departments this fall. It all depends on farm prices, and it looks as though they are heading the right direction."

Al DuTeau, president of the DuTeau Chevrolet Company, which just this month moved into new quarters adding nearly a third more floor space, doesn't look for any marked improvement in new car sales this fall, although he figures that fair prices for farm products will be the deciding factor and there is a possibility that sales will forge ahead of the forepart of the year, despite the seasonal trend to the contrary.

"Service and repair business has been and still is good," he declared, "but car sales, both new and used, have been even duller than we had looked for this summer. I look for a slight improvement this fall, depending entirely on farm prices, and even if farm prices fail to show the gain the farmers deserve, I don't think we'll find business any worse than it has been. Here in Lincoln the fall season has always been a fairly good one, with thousands of students coming back to the State University and the various other colleges in the city, thousands of farmers coming to the State Fair and crops appearing to be in fine shape.

"Our truck business has fallen down this summer, but I believe that truck sales will reach a record mark just as soon as the farmers get some money to spend and the tone of business in general improves. Commercial operators and fleet operators, as well as farmers in this part of the country, are patching up their old jobs and making them do the work as long as the wheels will stay on. This trend gives the service department a fair volume of business, of course, but it isn't healthy. I rather believe that our truck salesmen are about due to get a break, and it will come this fall if we can get even 10 cents per bushel more for corn and wheat than present market quotations."

James Schneider of O'Shea-Rogers Motor Company, Ford dealers, said that new car sales this summer have failed to come up to their expectations, although service department receipts have held up satisfactorily. "We have been doing a little business," he said, "and by working hard and cutting down overhead we have managed to get by. Truck sales have been away off, but this phase of our business, along with new and used car sales, take a decided change for the better no doubt, if farm prices show a little improvement this fall."

"Both passenger car and truck sales have shown a little improvement this month," stated Guy Johnson of Johnson-Minnick-Strom, Inc., Dodge and Plymouth dealers and distributor for seven counties in the South Platte area. "Our business so far this year, including all departments, has been somewhat off from last year, but we have been making a go of it and are not complaining. In fact, we look for some improvement this fall, but we'll know more about that when fall comes."

Lou Miller, service department manager of the Woods motor truck division, Patriot Manufacturing Company, Lincoln, reported that truck sales have been fully 50 per cent. off from last year, but service receipts held up in good shape. "Practically all of our truck and body sales normally are made to farmers and commercial truckers," Mr. Miller said, "but neither of these markets has shown much life this year. Give Middle Western farmers decent prices for their produce, however, and it will be a different story."

Omaha dealers report the same dullness in new car and truck sales and satisfactory volume in their service departments, as the Lincoln merchants, although there may be a little more optimism evident in the Missouri River metropolis. Andrew Murphy & Sons, Chrysler distributor for Nebraska and western Iowa, announce that their business for the first seven months of 1932 showed an improvement over the same period a year ago. Miller-Knuth Chevrolet Company sold eighty-four cars during the first two weeks of August, a material increase over any similar period this year and much better than for the same two weeks in August, 1931.

"The introduction of the new Graham six, coupled with a marked reduction in price of both the six and the eight cylinder models, has had the effect of stimulating this company's business," asserted J. W.

(Continued from Page 1)

TRAILER COMPANY HEAD REPORTS TRADE GAINS

Cincinnati, O., Sept. 23.—J. Englaender, president of the Trailer Company of America, manufacturers of Lapeer and Trailmobile trailers, Cincinnati, O., has just returned from an extended trip through the East and Middle West, and reports increasing optimism in business circles as regarding the return of prosperity.

This report is supported by the fact that September orders received by this company, based on our experience during the first half of this month, will top August by 75 per cent., and September, 1931, by 15 per cent.

NO CURTAILMENT IN RUBBER OUTPUT

(Continued from Page 1)

tapping, paying them for work done rather than a fixed daily scale.

The areas of rubber land devoted some years ago to the new idea of "bud-grafting," whereby much higher yields of rubber are obtainable, are regarded by Keeler as a distinct menace to any efforts at control. The areas so planted probably do not exceed 8 per cent. of the total in the Far East, but it has been demonstrated that yields up to 700 and 800 pounds of rubber are obtainable, against the present average of around 400 pounds. The bud-grafted areas will soon come into bearing, it was learned.

300 CHEVROLET DEALERS AND DISTRIBUTORS MEET

Greensboro, N. C., Sept. 23.—Wholesale and retail dealers of the Chevrolet Motor Company in North Carolina assembled at Sedgefield Inn for a field day and entertainment program, with J. E. Miller of Greensboro in charge of the arrangements. Around 300 dealers attended.

Following the athletic stunts a barbecue supper was held, followed by a round of entertainment. District Representative Miller states the occasion is the outgrowth of unusually good business enjoyed by the dealers during August, intensified by the belief that the upward trend is on a permanent basis and that all that will be necessary is to go out and get the business.

DODGE DEALER BODY LARGER THAN YEAR AGO

Detroit, Mich., Sept. 23.—Dodge Brothers' dealer organization at the end of August this year was larger than a year ago by 112 dealers, according to A. van Der Zee, general sales manager.

"Contrary to the condition which prevails generally in the industry where there has been a heavy shrinkage in the total number of dealers," said Mr. van Der Zee, "we find that the number of dealers attracted to the Dodge franchise continues to increase."

RAYBESTOS COMPANY EXTENDING FACTORY

Peterborough, Ont., Sept. 23.—The Canadian Raybestos Company, a subsidiary of an American concern located in Bridgeport, Conn., is making two additions to its plant, according to the industrial department of the Canadian National Railways.

The company manufactures brake linings, packings, etc.

NEW SPARK PLUG COMPANY ORGANIZED ON COAST

Hollywood, Cal., Sept. 23.—The Powerplex, Inc., has been organized here with headquarters and plant at Romaine and Sycamore avenues, where it will manufacture Vortex spark plugs.

Capacity is 125 plugs per hour. A national advertising and distribution plan has already been outlined. T. W. Burnam is general sales manager.

SPENCER HEATER ADDS NEW STOKER-BOILER

Williamsport, Pa., Sept. 23.—Announcement was made today by C. N. Tull, president of the Spencer Heater Company, of a new Spencer stoker-boiler combination unit designed to burn low-priced grades of soft coal with maximum efficiency.

The Spencer Heater Company is a division of Cord Corporation.

NEW FEDERAL TRUCK OUTLET IN MILWAUKEE

Milwaukee, Wis., Sept. 23.—Otto P. Seefeld has been appointed distributor for Milwaukee and surrounding territory by the Federal Motor Truck Company, which for many years has operated its own branch in Milwaukee.

SPARKS from DETROIT

Sales Incentives

* * *

A Native Son

* * *

In Memoriam

* * *

John L. Gonard

* * *

Chris Sinsabaugh—Detroit Editor

THE retail salesman is the fair-haired boy these days in the automobile industry. With excellent prospects of going into 1933 with dealers' stocks at the lowest count in years, sales managers, driving for fall business, are leaning heavily on the man who rings the doorbells. He's being filled with pep and enthusiasm, and, to spur him on to renewed efforts, rich prizes and bonuses are being offered in addition to the regular commissions. He is far from being the "forgotten man."

I've been hearing a lot of late about these sales promotional schemes, but one that strikes me as being out of the ordinary is being tried out successfully by Go-Getter John Chick, general sales manager of Cadillac-La Salle.

* * *

CHICK'S PLAN splits the salesman's time up into five periods of ten days each. The salesman files the names of his five best prospects at the start of each period, numbering them one, two, three, four and five. No. 1, of course, is his livest, and if he closes that deal he gets a check for $50. Selling any one of the other four means $35 extra for him. If he happens to pick up some one not listed, that's a $25 check.

* * *

CALIFORNIA IS MAKING a native son out of Rockne, judging by the reports that are coming to the desk of Sales Manager Frank Wiethoff and relayed to yours truly in the Fisher Building cafeteria.

Just as I got to the toothpick stage downstairs, Wiethoff came along with the latest dope—how August returns show that, for the third consecutive month, Rockne is in fourth place in registrations in the state where the bears are golden bears. Starting 1932 at zero, Rockne, out in California, climbed to fourth in June and has held the place ever since. Gratifying, too, is the fact that August's sales increase over July is 18.5 per cent.

* * *

FEW OF US knew Andrew J. Smith, who died in Port Huron the other day, aged 81, yet it may well be said he laid the foundations of the automobile industry in the Detroit area. Mr. Smith was a pioneer contractor and is credited with having built the Highland Park plant of the Ford company, with the exception of the main building fronting on Woodward Avenue. His company also built the two original Paige plants, the original Hudson factory, most of the Packard plant and several units for Dodge.

* * *

DEATH ALSO HAS CLAIMED Paul O. Bacon, for a number of years purchasing agent for the Ford company. For the past three years Mr. Bacon had been a sales representative for the Detroit Gasket & Manufacturing Company, making the Steelbestos gasket.

* * *

WE HAVE WITH US in Detroit at the present time John L. Gonard of Englewood Cliffs, N. J., who is showing his automatic backing control transmission to Detroit engineers. This transmission was in the last New York show.

It is not a brake, but a lock against backing except when the gear is in reverse. In addition to its safety feature, it is claimed that it eliminates the necessity of accelerating the motor to start a car on icy surfaces or on grades or hills. It already has been used on buses.

* * *

ANOTHER CALLER on the commentator was M. H. Carpenter, now a district manager of Continental-De Vaux, whose long connection with the industry cannot be denied. Carpenter it was who took over the S. G. V. and moved it to New York, where he put it across. Later he built the well-known Phianna, a quality car we all were talking about a decade back. And then he went to the other extreme—he launched the Martin, which never really got on the market, but which, he thinks, turned the minds of the people to the possibilities of an extremely low-priced car, with unusual riding qualities.

Retail Salesmen—This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, success, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesmen to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

How to Become a Master Salesman

Some time ago Automotive Daily News carried a story telling what Pierce-Arrow salesmen are doing to promote revival now, not next year. The men are carrying on a campaign, pledging themselves to see so many prospects per day, to get so many demonstrations a week and to get all the business there is. The Pierce-Arrow Company is helping in this drive and has promised the men who make the best records a reward in the shape of the title Master Salesman and a trip to the Pierce-Arrow plant in Buffalo to a convention to be held in November.

In the current issue of the Pierce-Arrow News, the sales department's house organ, there are some suggestions to salesmen who are striving for the Master Salesmen's degree and the trip to the home plant. These suggestions are so good for every salesman in the automotive industry that we are taking the liberty of transcribing them for the benefit of our readers:

You have already pledged yourself to a definite number of personal contacts and actual demonstrations.

Have you started your end of the program?

Are you following up these prospects with whom we have broken the ice?

A telephone call will earn you an appointment, but nothing more. You must see each one personally.

Try to bring these people to your showroom. And when you get them there, introduce them to your sales manager, to the head of the business, himself. Not only are these introductions complimentary to the prospect, but they immediately get the two most important individuals in the business personally interested in your personal progress toward winning an individual order.

As important as the original contact in your success is your demonstration. The first essential to a successful demonstration is a thoroughly clean and conditioned demonstrator. Does that seem superfluous? More business than any one would dream of has been lost because the last man who used the demonstrator left dirt or dust on the carpets, ashes in the ash receivers, or forgot to mention the loose bumper, so that the service department could check and correct these minor ailments.

You have a right to demand a demonstrator in the pink of condition, and it is your privilege, and should be your practice, to refuse a car unless it measures up to everything a new car can achieve.

These Pierce-Arrow eights and twelves will help sell themselves if given a chance. Many demonstrations must be made in the regular way, within a limited time of an hour or two. But there are other kinds of demonstrations which, if occasion permits, are an even more effective help in selling. Many a man who cannot spare hours from a busy day to take a ride will be glad to drive a new Pierce-Arrow home from the office, take a ride in the evening and bring the car back with him in the morning. Every Pierce-Arrow demonstrator should spend its week ends not in the service of a favored son of the sales or service department, but loaned to a prospect who can logically be expected to like and buy it. Seek opportunities to loan a demonstrator for special trips where it might particularly be appreciated. Establish the sense of ownership with such a loan and the buying urge will take care of itself.

Remember, sales increase in direct proportion to demonstrations. Keep the demonstrator busy and it will earn extra commissions, and perhaps the title, "Master Salesman," for you in November.

May we recommend a practice that will go further to close a sales quicker than any other?

Have the prospect's old car thoroughly examined and appraised properly; get the allowance from the man who has the last word to say—and then make your first price as attractive as possible.

Be certain your appraisals are in line with competition. Give the prospect all you can allow at the start. If you have properly demonstrated and sold the new car, you will get the order.

Earlier in the discussion we suggested that your prospect be brought to the showroom whenever possible. This move has an added importance in that it gives you the opportunity to show and sell a car in stock. A man who has had a very definite negative attitude toward the purchase of a new car very often may see a car that appeals to him strongly, a car which he would definitely desire to own. The definite, positive impression which he receives overcomes the indefinite, negative attitude which he formerly held, with the result that a cold suspect becomes a warm and likely prospect overnight.

It is a fundamental rule of salesmanship that a prospect must be asked to buy, not once or twice, but at every opportunity. Courtesy is needed; tact is often a requisite. But more than these, even, is the persistence which wears down resistance until a prospect accepts the inevitable and makes a decision in your favor.

This continuous optimistic, positive attitude, often in the face of a cold and definite refusal on the part of a prospect, requires courage of no uncertain order, as definite a quality as was ever shown by famous fighters in other fields. This "never say die" spirit of persistence in the face of open opposition is, above all others, the mark which lifts the Master Salesman above the crowd.

NEW NASH DISTRIBUTOR NAMED IN BUFFALO

Buffalo, N. Y., Sept. 23.—Buffalo business and financial circles found new inspiration today in announcement of the organization of the Hatch, McKay-Nash Corporation, which brings together executives of two of the city's major business enterprises for the distribution, merchandising and maintenance of Nash motor cars in Buffalo and its New York and Pennsylvania motoring territory.

Mason B. Hatch and Allen T. McKay of the Overland Knight Corporation have joined with Charles B. Warren and A. E. Skinner, executives of Nash Buffalo, to consummate the new organization, which will take over immediately the distribution of Nash motor cars in this territory.

W. F. GROOM MOTORS ELECTS JOHNSTON

Buffalo, N. Y., Sept. 23.—Directors of the W. F. Groom Motor Corporation, Hudson-Essex distributors for Buffalo and vicinity, yesterday elected Franklin A. Johnston treasurer, succeeding S. W. Miner, resigned. The other vacancy filled by the board was that of vice-president, to which Louise B. Broom was elected.

TOLEDO A. T. A. PLANS WEEKLY GATHERINGS

Toledo, O., Sept. 23.—The first of the regular weekly meetings of the Toledo Automotive Trades Association was held at the Toledo Club. Edgar T. Keller, head of the local Chrysler-Plymouth organization and chairman of the passenger car group, was in charge of the opening meeting. Each member of the organization assumes charge of one meeting. Those who will have charge of the September-October meetings are: Eli E. Culver, Charles Atwood Norm, E. Jamieson, George Kopf, O. D. Wearley and Ross Perry.

GLIDDEN BUICK TO HANDLE PONTIAC SALES

New York, Sept. 23. — The Glidden Buick Corporation has been appointed to take over the sales of Pontiac cars in this territory. Headquarters for both sales and service will be located at the present Glidden Buick establishment at 131st Street and Broadway, Manhattan. The company will continue its activities on the account of the Buick, for which it has been sales and service representative for twenty-three years.

CHEVROLET ENTERTAINS

Indianapolis, Ind., Sept. 23. — Nearly a hundred Chevrolet salesmen, service workers and office attaches were entertained at the Indianapolis Athletic Club last week as a reward for outstanding work during the month of August. The guests came from all sections of the state to attend the meeting which was devoted almost entirely to recreation.

Used Car Selling Prices

Automotive Daily News in this department offers for the benefit of its dealer and salesmen readers a compilation of prices at which used cars have within the past few days been offered for sale by reputable dealers in various cities. These prices will vary on condition and from other causes. They are not presented as being the exact prices at which these models should be sold, but simply as the prices at which they have been offered for sale by dealers in the various cities. Other cities will appear in subsequent issues of this paper.

Indianapolis, Ind.

	1931	1930	1929	1928
Auburn 3	495-545b	....	250	125
Buick Standard	....	405	250-395	185c-295
Buick Master	895	865	445	325
Chevrolet	325c-395	235c-265c	100-185c	100-125cp
Chrysler 6	550	350	275	100cp
Chrysler 8	775cp	445-550	....	225
Chrysler Imperial	....	....	450	....
De Soto 6	350-395	....	215-225cp	....
Dodge 6	475	....	265-295	145
Dodge 8	595	395	....	....
Essex	325c	275cp	145c-175	75-115
Ford	295-345cpd	195-245	100-135	....
Graham 6	....	375	225	165
Hudson	445cp-495cp	....	250-275	100-185
Hupmobile 8	695ccp	....	....	295
La Salle	....	....	595	275-350
Lincoln	....	....	750	395
Marmon	495-595	....	195-300	125
Nash 6	345cp	....	175-245	175
Oakland 6	575c	295-325	....	125-150cp
Oakland 8	395	245	....	....
Oldsmobile	425cp-595	345cp-435c	245c-395	75r-195cp
Packard	....	....	495	385
Plymouth	....	275c	....	....
Pontiac 6	325cp-450	....	275	100-150
Studebaker 6	....	....	....	95
Studebaker Dictator	....	395	....	....
Studebaker Commander	....	400	....	175-250
Studebaker President	1195	545	....	....
Stutz	1800d	....	....	....
Willys-Overland	250-300	....	....	....

d-De luxe. c-Coach. cp-Coupe. ccp-Convertible coupe. b-Brougham. t-Touring. r-Roadster. Where no distinguishing mark follows the price the car offered is a sedan.

Dealer Activities

CHICAGO

Two important additions to the ranks of De Soto dealers are announced. They are the Sampson-Wolfson Motor Sales Company, Inc., at 3806-10 Roosevelt Road, and the A. C. Wenzel Motor Sales, at 1143 Diversey Boulevard. Members of both of these firms are well known in their respective communities, where they have been established for a number of years.

* * *

PHILADELPHIA

William R. Wolf, Inc., Ford dealer, is doing a lively busines in sales of commercial units, having just delivered twelve new Model 157 panel-body trucks, valued at more than $1,000 apiece, to Good Distributors, Inc., and recently ten trucks to the Freihofer Baking Company. The service department is more than holding its own.

* * *

Fidelity Motors, Fidel W. Krosser, proprietor, on September 26 will celebrate its twenty-fifth business anniversary with elaborate decoration of its showroom at 4316-20 North Broad St. The dealership is one of the oldest Hudson-Essex concerns in the Gomery-Schwartz Motor Car Company distributing organization, having handled this make for eleven consecutive years.

* * *

M. S. Copeland, manager of the Studebaker sales and service business at 4634 North Broad St., reports that while sales of new automobiles may be characterized as promising, both used car sales and service operations have been very active. The showroms have been established only four months, but the fourth month has seen an increase in the sale of used cars of 75 per cent. over that of the first. Regarding the business as a whole, Mr. Copeland says he is much encouraged.

* * *

A correlation of effort is announced between organizations headed by two of the oldest, most experienced of the Quaker City's car distributors, J. G. Roberts of Nash, and H. L. Peterson of Marmon. The latter organization, in addition to retaining its Marmon distributing franchise, now assumes the responsibility of Nash sales and service for the central metropolitan district of Philadelphia. The Nash Philadelphia Company, as already announced, recently transferred its activities from Broad Street to larger quarters at 16th Street and Indiana Avenue.

* * *

SAN ANTONIO

Reminiscing of the changes in the automotive trades in San Antonio, it was pointed out that Main Avenue has three distributorships against four for Broadway, the latter being generally conceded as Automobile Row. Main Avenue has Hudson-Essex, Hupmobile and Packard, while Broadway has Franklin, Buick, Chevrolet and Studebaker.

* * *

The Orsinger Motor Company, Hudson-Essex, is conducting a series of special sales meetings, in which not only the selling angles of these two cars are thoroughly discussed, but the superior mechanical features. The meetings are alternated, one being devoted to sales talks, while the next is given over to the mechanical improvements and qualifications. They are proving successful in developing more men who can sell.

* * *

Indications of better business are seen in automobile sales reported thus far this month. Of special interest is the fact that Packard, Cadillac, Lincoln and Pierce-Arrow are reporting sales, while automobiles of the medium-priced class are reporting increased sales. There was some doubt about the future during August, when 70.8 per cent. of the total sales of 225 pleasure cars were accounted for by Ford, Chevrolet and Plymouth.

INDIANAPOLIS

W. R. McGeehan, used car manager of the Central Buick Company here, is a confirmed booster for his own merchandise. He recently returned from a 1,300-mile vacation trip in a car from his reconditioned stock, reporting perfect performance all the way.

* * *

Seven cars to one owner is the record of Carl H. Wallerich, Chrysler distributor here, who recently delivered No. 7 Chrysler to Paul Zierz, furrier at one of the leading department stores here. Mr. Wallerich has personally male all seven trades with this booster, whose latest car is a de luxe eight roadster.

* * *

Another champion repeat buyer is Curtis Walker, former big league baseball player, who a short time ago bought his fifth Willys automobile. The deal was made by W. E. Bisinger of the I. Boyd Huffman Motor Company, distributor here, and the new coupe was delivered to Walker in Toledo by Mr. Bisinger.

* * *

A busy week marked the formal opening of Miller Motor Sales, Inc., following announcement of purchase of complete control by William C. Miller, general manager. The firm formerly operated as the Virginia Motor Sales and was one of the leading Pontiac dealers in this zone. The changeover was marked by a gala program.

* * *

SEATTLE

Richard P. Lewis, sales manager for Sands Motors Company, was in charge of fifteen spic and span new Studebaker and Rockne cars that were used as official conveyances for Gov. F. D. Roosevelt and party upon their visit in Seattle. A President car was used for the personal demands of the presidential nominee of the Democrats.

* * *

The Sands Motors Company is on a cash basis in its repair and service department. This was an important step by a concern that operates a big shop. As an indication of the volume done, it may be stated that $50,000 was on the books at that time, one-third of which might be classed as "slow."

Automotive Daily News

"Of, By and For the Entire Automotive Industry"
Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION
350 Hudson St., New York, N. Y.

C. J. Elder, President. H. A. Tarantous, Vice-President. Alexander Johnston, Secretary.
Entered as second-class matter August 27, 1925, at the post office at New York, N. Y., under the Act of March 3, 1879.
350 Hudson St., New York, N. Y. Telephone CA nal 6-1000.

MEMBER A. B. C.

Mail subscriptions to CIRCULATION DEPARTMENT 1926 Broadway.
Telephone TR afalgar 7-4500.

Subscription Rates: One year, $12.00; two years, $20.00 for United States and Canada, also Mexico, Cuba and Panama.
To Other Countries: One year, $15.00; two years, $26.00. Single copies 5 cents.

SATURDAY, SEPTEMBER 24, 1932

ADVERTISING AND BUSINESS HEADQUARTERS

Harry A. Tarantous, Business Manager 350 Hudson St., New York, N. Y.
B. B. Crighton, Assistant to Business Manager.

George M. Slocum, Manager, Detroit Bureau, 427 Fisher Building, Detroit, Mich.; phone Trinity 2-3500. Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill.; phone Andover 2400. Metz B. Hayes, New England Manager, Little Building, Boston, Mass. Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash.

Address ALL Advertising and business correspondence to 350 Hudson St., New York city.

EDITORIAL DEPARTMENT

350 Hudson St., New York, N. Y. Telephone CA nal 6-1000.
Alexander Johnston, Editor. William C. Callahan, News Editor.

Statistical Department (registrations and specifications), P. J. Robas, statistician. Engineering Department, A. Benson Carleton, technical editor. Merchandising Department, Charles S. Zack, editor. Art Department, John Bauerfeld, director.
Detroit Bureau, Chris Sinsabaugh, editor, 427-8 Fisher Building, Detroit, Mich. Telephone Trinity 2-8500. Contributing editor, John C. Wetmore.

The Dealer and Today

FROM many sources come reports that automotive sales are improving—relatively. In a very recent issue of Automotive Daily News there was a tabulation showing that passenger car sales in August were running a scant 8 per cent. under those of July. This may not sound like the acme of good news until we recall that the normal seasonal decrease in sales in August under its preceding month run to approximately 20 per cent. To be cutting down the comparative decrease in sales at a time such as this is a real achievement.

BUT, while the average automobile dealer is undoubtedly delighted to be able to look forward to the lifting of the pall of misery that has smothered him so long, he is wondering what he is going to do to keep body and soul together until the promising future becomes the prosperous present. It is five months before the normal retail automobile buying season starts. We cannot expect heavy vehicle sales before the first of March, 1933, and in the meantime what shall we do to be saved from our lean and hungry creditors?

There is just one answer, and that is SERVICE. We are now in one of the recognized and normal service demand periods of the year. Winter in the northern half of the country impends. To perform its functions satisfactorily every motor car has to have some preparation to meet cold weather. This is the season when the service department should be making cold weather servicing sales. Ignition systems need overhauling to enable them to meet efficiently the extra demands placed on them by cold weather. Radiators will have to be filled with anti-freeze solutions. Sales of heaters are easy to make on cold mornings when the car owner has felt his fingers tingling on the wheel.

BUT while some of this seasonal business will drift into the shop of its own accord, the dealer who goes out after it is the one who will get more than his share, with the accompanying profits.

To our dealer readers we say, "Go out and drag them in." Advertise, use your newspapers, send postal cards offering cold weather service operations at attractive rates. Have your men make personal calls. Use the telephone. In every way concentrate for the next few weeks in getting the seasonal service business that can be had by those who go after it.

Proof of Sales Increase

Alfred P. Sloan has just announced that Chevrolet has been compelled by demand to increase its production schedule by 10,000 vehicle units. Presumably this means its schedule for September, as H. J. Klingler, vice-president and general sales manager of that organization, yesterday announced that Chevrolet sales in the first ten days of September had run 10 per cent. ahead of the same period in August.

In a recent issue of Automotive Daily News there appeared a compilation showing August passenger car sales in thirty-three states and the District of Columbia. The total ran less than 8 per cent. under that for the same territory in July. The significant part of this is that the decrease in sales in August normally runs about 20 per cent. under July. Another very significant feature of the situation is that the gain in sales was practically all registered in the latter half of August. We must also remember that during three weeks of August the River Rouge plant of the Ford Motor Company was closed and all production came from the local assembly plants throughout the country.

There seems to be no question that the sales situation is improving, but whether this is due to a general improvement in conditions, not yet entirely apparent, or is caused by necessity buying of automotive transportation, is not yet clear. In any event we have a perfect right to look upon developments since mid-August as justifying modest optimism.

An Instrument to Control Idle Time

The Chronolog has been developed and is being built by the National Acme Company of Cleveland, O., and will be marketed by the Graybar Electric Company.

This instrument gives the operator a visible record throughout the day of idle time, in minutes, that has accumulated during his run; of productive time, and a count of the units produced—whether they are feet of paper, yards of cloth, cans of paint, or pieces produced by a machine tool. It can be applied to steel mill equipment or packaging machines. It is claimed to be practically universal in its use.

In addition to keeping the operator constantly informed, the Chronolog presents a detailed printed record, called the "Chronorecord," to the foreman or superintendent. This reveals precisely when an interruption occurred, why it occurred and how long it delayed normal production. The Chronolog also produces any desired number of "Chronocards" on which are summarized the total idle time, total productive time and units produced. These may be routed to timekeeper, time study and production departments.

With this explicit data available, everyone concerned is advised how serious were the various causes of interruption and definite steps can be taken to reduce them. The data is available long before the usual cost figures can be compiled, and enable the management to improve the situation during the run instead of waiting for a post mortem after the work is completed.

The Chronolog is energized by the ordinary lighting circuit and can be quickly applied. Whenever the machine or equipment is shut down for any cause—such as "down for stock," "inspection," "repair," "tool grinding," "cleaning," "set up," etc.—the operator registers that cause by dialing the symbol letter corresponding with the reason for shutdown indicated on the symbol chart attached to the Chronolog. At the same time, a red signal light goes on, to let the foreman or other supervisor know that the machine or equipment is not producing, in order that immediate steps may be taken to correct the difficulty. The Chronolog records the gradually accumulating toll of idle time until normal production is resumed, when it automatically stops counting idle time and resumes the count of productive minutes and units produced.

The 'Chronorecord" also indicates to the minute the time the operator actually starts and stops his work, and the arrival and departure of foreman, supervisor, inspector, machine repair man, stock man or electrician, thus recording the activity of those who have a definite influence on the output of the equipment, but who are not under the operator's control.

Installations on various types of production machines and equipment during the past year prove that productive activity is increased by the Chronolog from 20 to 83 per cent., production costs are reduced, and the earnings of the operator are augmented in proportion. These results are quite naturally reflected in manufacturing costs and earnings statements, and therefore have a significant bearing upon production policy.

"CHRONOLOG" installation at the plant of the National Acme Company, Cleveland, Ohio. Tolerance gauge at inspection bench. Prior to the installation of the "Chronolog" at the inspection bench, two girls were capable of handling 350 aluminum starter rear end plates per hour according to time study estimates. By applying a contact switch level to the gauge, an accurate count of pieces inspected is maintained. This indicates that the two girls, at the end of the first week, inspected an average of 400 pieces per hour; at the end of the second week, an average of 500 pieces per hour, and at the end of the third week, an average of 600 pieces per hour, which is steadily being maintained. This enables the inspectors to work shorter hours with the same pay due to piece-work rates

OPERATOR'S NUMBER	CLOCK TIME	IDLE TIME SYMBOL	IDLE MINUTES	PRODUCTION MINUTES	UNITS PRODUCED
	4:3 3	T	1 9 1	4 0 6	1 4 3 6
1234	4:3 5	T	1 9 3	4 0 8	1 4 4 3
	4:3 8	T	1 9 4		
	4:4 3	T	1 9 9		
	4:4 8			4 1 1	1 4 5 4
1234	4:4 8	E	2 0 1	4 1 1	1 4 5 5
	4:5 3			4 1 5	1 4 6 7
	4:5 8			4 2 0	1 4 8 5
1-342 1234	5:0 1	J	2 0 2	4 2 3	1 4 9 5
	5:0 3	J	2 0 4		
	5:0 8			4 2 7	1 5 0 8
	5:1 3			4 3 2	1 5 2 5
	5:1 8			4 3 7	1 5 4 1
	5:2 3			4 4 2	1 5 5 9
1-342 1234	5:2 5	E	2 0 5	4 4 4	1 5 6 4
JAF 1234	5:2 7	J	2 0 7	4 4 4	1 5 6 4
	5:2 8	J	2 0 8		
	5:3 3			4 4 7	1 5 7 4
	5:3 8			4 5 2	1 5 8 8
1234	5:4 2	T	2 1 0	4 5 6	1 6 0 0
	5:4 3	T	2 1 1		
	5:4 8	T	2 1 6		
1-342 1234	5:5 2	T	2 2 0	4 5 6	1 6 0 0
	5:5 3	T	2 2 1		
	5:5 8	T	2 2 6		
1234	6:0 1	T	2 2 9	4 5 6	1 6 0 0

ORDER No. 04691 DATE July 29-3
PART No. 73756 MACH. No. E 2849

DIAL SYMBOLS	SUMMARY IDLE MINUTES
A - PERSONAL	10
E - DOWN FOR STOCK	33
J - INSPECTION	24
H - CLEANING MACHINE	32
M - TOOL GRINDING	51
T - MACHINE REPAIR	63
X - NO JOB	
Z - BUSY ON OTHER MACHINE	
S - SETUP	16
TOTAL	229

NOTATIONS AND APPROVALS: F 203 Same about stock handling and interest of tools also cleaning machine RR

BOTTOM of "Chronorecord" showing form of report which goes to foreman, superintendent, manager, etc., showing causes of idle time

MAX L. JEFFREY

VESPER HAS RECOVERED FROM ACCIDENT HURTS

St. Louis, Sept. 23.—F. W. A. Vesper, treasurer and former president of the National Automobile Dealers Association and for many years Buick distributor in St. Louis, who was severely injured in an automobile accident August 25 in St. Louis, is able to be around again. He sustained some broken ribs and painful bruises, but no permanent injuries.

COMING EVENTS

SEPTEMBER

27-28—**Chicago.** American Electric Railway Association Meeting, Hotel Stevens.
29-30—**Chicago.** National Association Motor Bus Operators.
30-Oct. 1—**Dallas, Tex.** American Institute Mining and Metallurgical Engineers, Petroleum Division.

OCTOBER

3—**Buffalo, N. Y.** Society of Automotive Engineers' Production Meeting.
3- 7—**Buffalo, N. Y.** National Metal Congress. Sponsored by American Society for Steel Treating, with co-operation of American Society of Mechanical Engineers, Institute of Metals and Iron and Steel Divisions of American Institute of Mining and Metallurgical Engineers, American Welding Society, Wire Association.
3- 7—**Washington, D. C.** National Safety Council Meeting.
3- 7—**Buffalo, N. Y.** National Metal Exposition, 174th Regiment Armory, W. H. Eisenman, 7016 Euclid Ave., Cleveland, director.
3- 8—**Buffalo, N. Y.** National Iron and Steel Meeting.
4- 5—**Niagara Falls, N. Y.** Empire State Automobile Merchants Association, Inc., Convention.
4- 6—**Toronto.** Transportation Meeting, S. A. E., Royal York Hotel.
6-16—**Paris, France.** Passenger Car Show.
10-14—**Atlantic City, N. J.** American Gas Association.
13-22—**London, England.** Olympia Show.
17-22—**Atlantic City, N. J.** National Hardware Association, Accessories Branch.

NOVEMBER

11-19—**Glasgow, Scotland.** Motor Show.
14-16—**Atlanta, Ga.** National Tire Dealers' Association.
15-17—**Houston, Tex.** American Petroleum Institute Meeting.
18-Dec. 4—**Paris.** Aeronautical Show.

DECEMBER

2- 3—**Detroit.** National Standard Parts Association Convention.
5—**New Orleans, La.** Association of Asphalt Paving Technicologists.
5- 9—**New York.** Annual Meeting A. S. M. E.
5-10—**New York.** Power and Mechanical Engineering Exposition.
5-10—**Detroit.** Third Annual Joint Trade Show, National Standard Parts Association and Motor and Equipment Manufacturers' Association, Convention Hall.

JANUARY

7-14—**New York City.** National Automobile Show, Grand Central Palace.
16-23—**Detroit.** Highway and Building Congress.
28-Feb. 4—**Chicago.** National Automobile Show, Coliseum.

FEBRUARY

11-18—**Kansas City, Mo.** Kansas City Motor Car Dealers' Show.
27-Mar. 14—**New York City.** Chemical Exposition, Grand Central Palace.

APRIL

20-21—**Cleveland, O.** National Petroleum Association.

Production--Engineering--Factory

FRAMES, HEAT-TREATED VS. NON-HEAT-TREATED

By G. A. GREEN
Vice-President in Charge of Operations, General Motors Truck Company

In the early days of the automotive industry side rails of heat-treated alloy, or high-carbon steel, were used in the frames of some of the higher priced automobiles. Manufacturers of these automobiles claimed that such heat-treated frames possessed materially longer life.

Experience has demonstrated, however, that properly designed frames can be built of non-heat-treated carbon steel, which will last fully as long as the life of the average automobile. The result is that, to the best of our knowledge, no heat-treated frames are now being used in American automobiles.

At the present time, certain trucks with a rated capacity of two and a half tons and over are using frames with heat-treated side rails, made from high carbon, high manganese or chrome nickel steel. Some engineers formerly claimed that such heat-treated frames possessed higher physical properties and that therefore the gross weight of a vehicle could be materially reduced, without sacrificing strength, by substituting lighter gauge heat-treated side rails for heavier gauge non-heat-treated stock. This contention, however, is not tenable since the stiffness of a frame is not influenced by heat treatment and obviously stiffness is a quality of first importance.

Frames of insufficient stiffness will, of course, bend under a load—and if the bend is very severe the side rails will be permanently deformed. Then, too, if bending occurs often enough, the rails will break. A heat-treated frame, whether it is made from carbon or alloy steel, will bend just as readily as a non-heat-treated carbon steel frame. In fact, if two frames—one made from non-heat-treated carbon steel, the other from heat-treated alloy steel but identical as regards structure, section, depth, etc.—are overloaded until bending takes place, the amount of bending under the same load will be identical in both cases.

Actually the only advantage possessed by the heat-treated frame is that it may bend a larger number of times without failure. But the fact that a frame bends indicates that it lacks stiffness. Of course, if bending is so severe as to stress the material beyond its elastic limit and thus break or deform it permanently, then obviously that frame is insufficiently stiff or an insufficient stiffness safety factor has been provided. And while it is true that the use of heat-treated alloy steel in the side rails would lengthen their life and defer their complete failure—yet the bending would be definitely harmful to both the chassis and body. The rivets or bolts securing the cross members would become loose and perhaps shear off. Then, too, the body structure would be severely strained. These tendencies are particularly serious in the case of van bodies.

In designing a modern truck frame, the side rail dimensions are developed primarily with the idea of providing adequate stiffness and, while opinions may differ as to the permissible amount of bending and

(Continued on Page 12)

Bonney Special Tools For Ford V8

Bonney Forge and Tool Works, Allentown, Pa., announces two new tools for servicing the new Ford Model V8.

One of these, No. 2577, is a tool of the spanner type, designed for replacing and adjusting main jets and fuel pump valves on Ford V8 carburetors. Both ends are equipped with pins to do these jobs.

The second tool is a special connecting rod socket, No. F18, which has an exceptionally thin nose to adjust Ford V8 connecting rod bearing cap nuts. These nuts have a close clearance and require a socket of this type. It has a ½-inch square drive and a $\frac{7}{8}$-inch opening.

Both tools are made of Chrome-Vanadium steel, are chrome-plated and carry the Bonney guarantee not to break or spread.

NEW G-E AUTOMATIC WELDING HEAD TO BE DEMONSTRATED

A new welding head, developed by General Electric engineers for automatically welding with heavily coated electrode, will be demonstrated at the Schenectady plant of the company September 27-28, 1932. Ever since the advent of the heavily coated electrode into the welding field the need for a device for automatically welding with this wire has been widely recognized. In perfecting this equipment, General Electric engineers have been guided by long years of experience in automatic welding, both in the design of equipment for industry and for use in the fabrication of G-E products. This new machine carries automatic welding into the field of high quality, high speed welds—something that has never before been done.

The new equipment, which consists essentially of a heavy-duty automatic head, with a device for conducting the current to the electrode, will have a capacity for heavily coated electrodes up to five-sixteenths of an inch in diameter, and is rated up to 600 amperes. Modification of its design can be made for larger electrode and heavier welding currents. The same relative increase in speed between hand and automatic welding can be expected with this equipment as with the standard General Electric automatic head and lightly coated electrode. A wide range of plate thicknesses can be successfully welded by making several passes.

The new automatic welding head is recommended not only to manufacturers of Class 1 pressure vessels, for whom it is eminently suited, but also to those manufacturers who desire a high-quality weld at high speed.

DISTRIBUTORS MERGE

Butler, Pa., Sept. 23.—Announcement is made of the consolidation of the Standard Motor Company, distributors for several years of the Chevrolet products, with the Cheeseman-Watson Company, for fifteen years representatives of General Motors in the sale of Buick automobiles.

REAMERS FOR SERVICING DOOR HINGES

It has been found that practically all door rattles and noises can be eliminated by removing the old worn hinge pins and reaming the hinges for oversize pins. These pins are driven in to a very tight, snug fit, holding the door firm and thus eliminating movement.

The Watervliet Tool Company is placing on the market a complete set of reamers to be used in fitting these oversize hinge pins. The sizes of these tools have been determined from the size pins used by the most popular cars on the road today, and have been prepared in conjunction with various manufacturers of hinge pins. A set of twelve reamers is complete to service practically all cars on the road and are prepared for .010 inch oversize pins.

Public Opinion

DEMANDS POWER BRAKES

...bigger value and lower prices

POWER BRAKES are here. Far from being strictly "commercial" equipment, they have caught public interest as being wholly necessary to safety and effective car-control.

The answer is B-K Vacuum Power Brakes—simple, low cost, efficient for the life of the vehicle; using the intake-manifold vacuum as power to apply the brakes—"more power to the right foot."

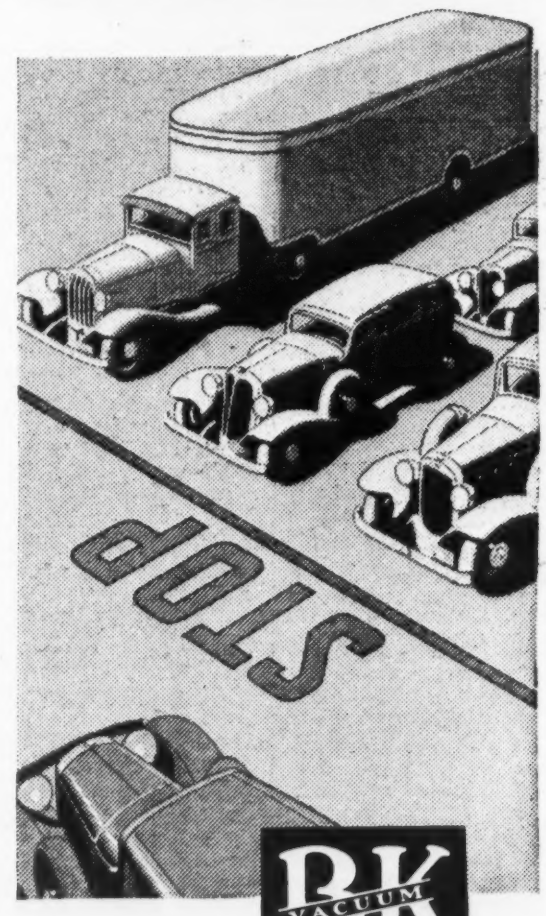
And now comes the best news in years for commercial operators—Super-Vacuum Power; providing 100% power for brake operation.

You're familiar with the many recognized B-K advantages—least weight; lowest first cost; minimum maintenance; instant remote control; universal adaptability to brake systems—on any truck, tractor, bus, or car; all emergency "train" advantages.

Best of all, important price reductions make B-K equipment the preeminent value.

For B-K's complete engineering cooperation, for new equipment or for field installations, get in touch with the B-K distributor or write us.

WATCH THE COMING AUTOMOBILE SHOWS



Specify B-K

BRAGG-KLIESRATH CORPORATION

401 BENDIX DRIVE, SOUTH BEND, INDIANA

(Subsidiary of Bendix Aviation Corporation)

BK VACUUM POWER BRAKES A BENDIX PRODUCT

COMPLETE SURVEY OF TREND IN TRUCK TRANSPORTATION

(FIFTH INSTALLMENT)

The total number of routes reported was 562, with an aggregate length of 49,160 miles. The average length of route was 88 miles, ranging from an average of 35 miles in Maryland for six companies operating 36 routes to an average of 198 miles in Arizona for three companies with 10 routes. An ordinary arithmetical average may be greatly and disproportionately affected by a few long routes, especially where the number of operations is relatively small. A truer picture of the typical truck route probably results from the median figure.

When the routes are listed in order of length, the median is the middle item in the series. In other words, the median route is exceeded in length by just as many routes as are inferior to it in length. The median length of route for Maryland is 27 miles, as compared with the arithmetical average of 35 miles quoted above, while that for Arizona is 135 miles as compared with 198 miles. In the later instance the effect of two routes approximating 500 miles each is pronounced. In certain other states medians and averages are nearly identical. Doubtless a complete map would show, except in certain sections, that practically all the cities of importance in the United States are connected by the network of truck lines now in operation.

Of the total of 562 fixed routes reported, 154 were interstate.

The small number of reports from some of the states prevents the drawing of too definite conclusions, but certain general tendencies may be pointed out. For 101 operators in states west of the Mississippi River the median length of 266 routes, covering 27,361 miles, is 80 miles, while for 81 firms east of the Mississippi, with 296 routes totaling 21,799 miles, the median is 60 miles. In 10 states in the southwestern part of the country 40 concerns, operating over a total of 13,006 miles on 112 routes, have a median route length of 95 miles.

Normal Radius for Irregular Hauling

Hauling to points not on fixed routes, commonly referred to as "anywhere for hire," was carried on not only by operators who had no fixed routes but also by many carriers in addition to their scheduled trips. Specific data regarding the length of haul were naturally difficult to secure for these irregular movements. The operator himself frequently has no detailed record of where his truck or trucks have been working, except perhaps on the exceptionally long trips. Each of the "anywhere for hire" operators was asked his normal or usual hauling radius.

For seventy operators, reporting irregular hauls other than "local," the average normal radius was approximately 119 miles, with a median of 100. The latter figure (100 miles) was also the most commonly reported, being named by seventeen out of the seventy irregular operators. It is clearly apparent that estimates were made in well-rounded figures. Three operators reported 500 miles; nineteen, on the other hand, reported fifty miles or less, some of these hardly exceeding local limits. In addition to the seventy irregular haulers mentioned, there were five who reported only a normal "local" range for their work, this usually being a city transfer business. Eleven operators who occasionally made long irregular hauls furnished no information as to the normal range.

The distance a commodity can profitably be hauled by truck is, in actual practice, limited by the nature of that commodity. Such freight as wheat, coal and building and road materials, whose weight or bulk are relatively high compared to their value, require special loading equipment and carriers of large capacity, such as freight cars or barges, if they are to be hauled long distances at economically sound rates.

Other products, like household goods, poultry and livestock, perishables which suffer from excessive handling, silk and similar commodities of relatively low weight or bulk and high value, can be hauled comparatively long distances at higher cost. Over the longer hauls trucks tend to specialize in the less-than-carload business, often equivalent to express service, although this is by no means universally true, as evidenced by bulk hauling of gasoline in tanks from Los Angeles 400 or 500 miles over mountains to Arizona points.

GENERAL BUSINESS IMPROVEMENT SPURS DEALERS IN LINCOLN

(Continued on Page 6)

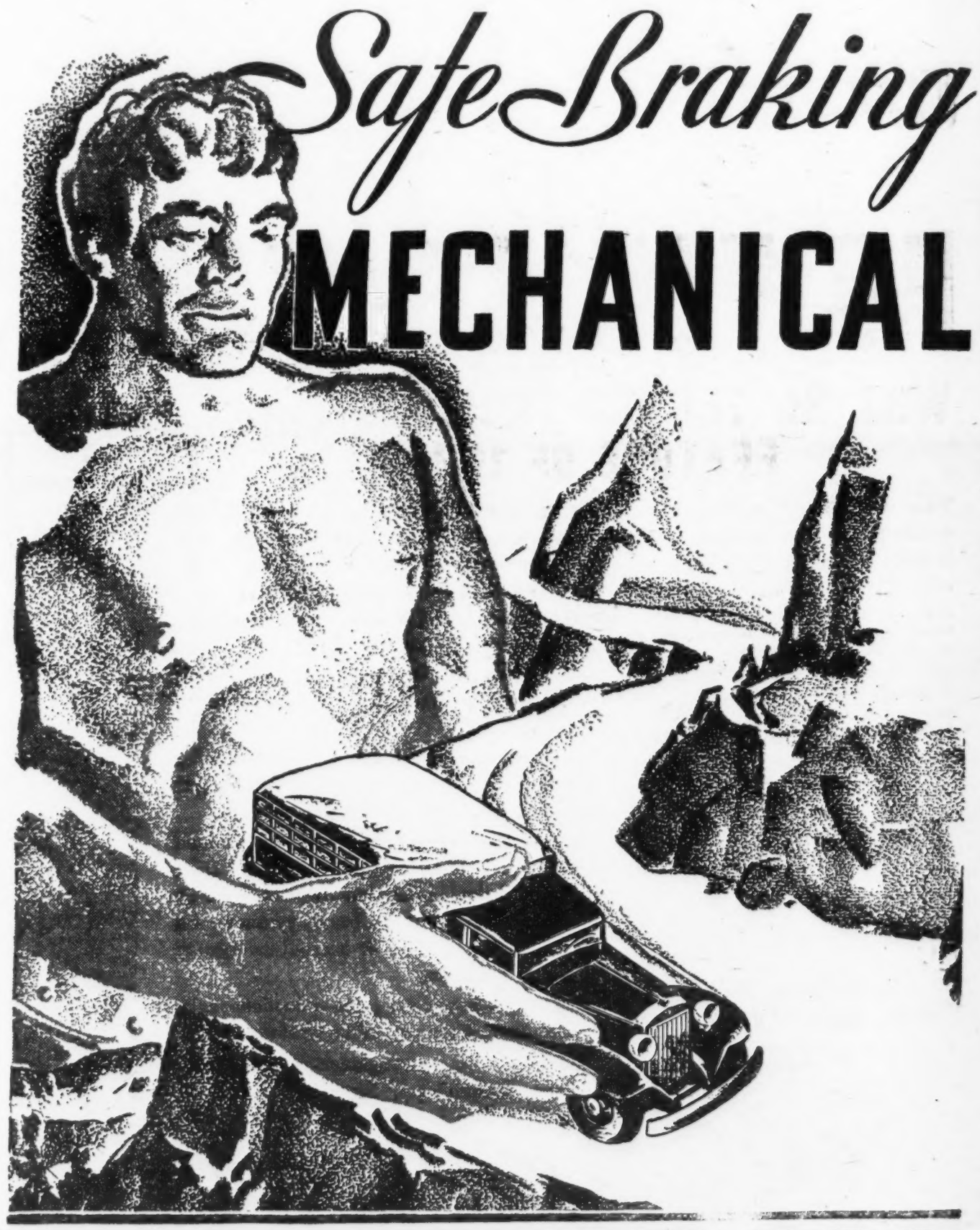
Wilcox, president of the Wilcox Motor Sales Company. "While we, like the rest of the dealers, are running under the figures of 1931, Graham sales in Omaha are higher than last year in proportion to the total for all makes, and we are confident that some improvement over the first seven months of the year will be experienced this fall. All we need is a little improvement in prices for farm products, and it looks as though that improvement is forthcoming in the near future."

Dan Vriesema, president of the Nash-Vriesema Auto Company, said: "I don't attempt to pose as a prophet, but it seems to me that all one needs is common sense and a little faith in the automobile business to see that better times are ahead for this particular industry, as well as for business in general. There has never been a period in American business when the automobile buyer has had so obvious an opportunity for sound and advantageous investment as he has today, and he is going to take advantage of this opportunity more and more as the mental attitude of the people changes and business in general mends.

"Prices of motor cars are the lowest that have ever been established in proportion to actual automobile values, and probably the lowest to be experienced in years to come. At the same time, engineering advancements, improved material and recently perfected mechanical devices make the current motor car models generally finer performers and more attractive, substantial and safer vehicles that the industry has ever before been able to offer. In other words, the dealer really has something to sell and it is up to all of us to go out and dig up business."

Tom Kinman, zone manager for the Chevrolet Motor Company, reports a 13.7 per cent. gain in the first six months of this year over the same period in 1931 in the sale of fleets of cars and trucks for commercial use. He predicts that the coming fall, winter and spring will see an improvement in commercial car sales in the Omaha territory, providing farm prices reach and maintain a fair level.

Lincoln bankers are hesitant about predicting a business revival for automobile dealers, but they do admit that gains made in many lines of business this month are extremely encouraging.



METROPOLITAN S. A. E. OPENS NEW SEASON; HEARS SEVERAL TALKS

(Continued from Page 1)

other than passenger-carrying space, he said.

In recent years manufacturers have lowered the center of gravity in the belief that riding qualities would be improved, he continued. However, the speaker pointed out, with the current types of low-pressure tires greater stability is obtained by raising the center of gravity because there is no side thrust on the tires with a higher center of gravity. Low-pressure tires, the speaker stated, were an adaptation of tires developed for airplane use.

Following Mr. Stout's talk several members contributed to the discussion. Austin Wolf, consulting engineer, stated that any great divergence from current practice was impossible, but that changes should be gradual because of the problems which confront manufacturers as regards parts inventory and tool equipment. The all-metal body, Mr. Wolf believes, is certain to come and the use of aluminum alloy materials in the chassis will be a devolpment in time. He pointed to weight savings of 2,500-3,000 pounds in chassis of 40-passenger buses and 5-ton trucks which are now manufactured. Streamlining as practiced in the aviation industry will not be brought about in the automobile until superhighways are built permitting the operation of automobiles at speeds of 100-120 m. p. h. to compete with airplanes.

E. P. Warner, past president of the S. A. E., reviewed a number of the contributions made by the aviation industry to the automobile, as well as to the fields of civil engineering and marine engineering. Mr. Warner remarked that he thought that one of the principal reasons for the lack of application of aviation advancements to the automobile industry has been their close association.

BRITISH AUSTIN REPORTS PROFIT

London, Sept. 23.—Austin Motor Company, Ltd., reports for year ended July 31, 1932, net profit of £546,387, after deducting directors' fees, maintenance of buildings and depreciation aggregating £396,758 and interest on debentures and sinking fund reserve aggregating £135,000.

Directors state orders thus far this year for all models are well ahead of the corresponding period of preceding year.

Continental's New Car Plans Stir Detroit

(Continued from Page 1)

and economical both as to original cost and operation."

At Chevrolet I am told it was an actual shortage of cars in stock which brought about the increase of 10,000 Chevrolet units in September. Factory folk were scraping the bottom of the barrel, so to speak, for cars. After each of the last four ten-day periods had shown an increase in sales over its predecessor, they were convinced that the pick-up was no false alarm—that people really are buying cars and that the hoped-for good fall business is actually materializing.

The most noticeable pick-up in sales comes from the cotton belt, where increasing prices for that product have loosened the purse-strings of those who have been wanting to buy, but who have feared to dig too deep in the old sock. But the cotton belt is not alone in the matter of increased buying of motor cars. Decided improvement is noticeable also in other sections of the country.

Foreign business for Hudson is on the up and up, too, for a statement from East Jefferson Avenue says that exports from January to September 1 are 12.9 per cent. better than for the same period in 1931. Exclusive of Canada, where Hudson-Essex business is mighty good, the company exported 1,696 units in the eight months of this year, as against 1,493. South America has been most responsive to the Hudson-Essex appeal.

From reports that come to me by "grapevine telegraph" I deduce that Ford's domestic production has been running around 1,500 units a day, of which approximately 150 are trucks. It is said that while most of the assembly plants are operating three and four days a week, some of them are running five.

It is estimated that this means about 6,000 cars a week, and it is thought this will be the production pace for some little time, there being no indication now of a slowdown.

COURTNEY JOHNSON FINDS IMPROVED OUTLOOK IN WEST

(Continued from Page 1)

has shown a great improvement in the first half of September over the previous sixty days, acording to R. W. Losey, zone manager in the Denver district, who accompanied Johnson on a tour of local branches. "The revival of trade has been notable in the Denver district," Losey said. "It is not usual that September shows an improvement in sales over August and July, but that is the case this year. I believe the depression is over in this Rocky Mountain area, at least, and from all reports I believe that applies to the entire country."

NEW BLUE AND RED BOOKS TO BE ISSUED OCTOBER 1

Chicago, Sept. 23.—Issuance of the seventy-third editions of the Blue Book and Red Book about October 1 was announced today at headquarters of the National Used Car Market Report, Inc. The forthcoming editions, stated Thomas J. Hay, president and general manager, will be for reference and use during October, November and December.

In addition to appraisal prices on used cars, the new books, declared Hay, will contain much information about specifications, identification marks and other points, thereby making them convenient for purposes of dealers, associations, insurance companies, finance companies and tax assessing bodies.

G. M. TRUCK OPENS NEW FACTORY BRANCH

Grand Rapids, Sept. 23.—General Motors Truck Company has opened a direct factory branch at 205-211 Market Ave. here this week. Newly stocked, completely equipped, the truck headquarters is organized to give a parts and repair service which it is said surpasses that available to truck operators in this vicinity.

FAGEOL FILES SCHEDULE

Oakland, Cal., Sept. 23 (UTPS).—Final schedules filed recently by the Fageol Motors Company show liabilities of $1,403,059 and assets of $2,287,863. On the other hand, Final schedules filed at the same time by Fageol Motor Sales Company, also of Oakland, show liabilities of $1,137,601 and assets of but $[illegible].

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

on the Curves—

POWER BRAKES

WILL BE THE BIG TRUCK SELLING FEATURE OF 1933

The elimination of wheel lock and loss of steering control on the curves is through an automatic front wheel brake release in proportion to the angle of turn—an exclusive feature which can be included in front axle design.

Just put any truck driver, a safety official or Liability Insurance man at the wheel of the truck equipped with these brakes—and you will see why they will prove the deciding factor in many a sale.

The linkage, under straight ahead driving conditions, applies under driver's control, the giant stopping force of car momentum uniformly to each wheel. On curves, an automatic front wheel brake which lessens braking force in direct proportion to the angle of turning, may be included in the axle design.

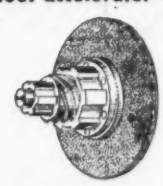
As the power unit utilizes the power of car momentum derived from wheel traction, it is always proportioned to the speed and load. It also offers decided economy advantages over systems depending on fuel-using boosters for braking.

Investigate the many other reasons why Stewart-Warner Power Brakes and Stewart-Warner Pedal-Operated Wheel Brakes offer unequaled safety and economy advantages for trucks, motor coaches and automobiles of every price class. They will prove a big selling feature for cars on which they are installed. Stewart-Warner Brake Systems are designed for factory installation only.

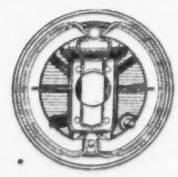
Our engineers are at your command.
Stewart-Warner Corporation, Chicago, U. S. A.
6050 Cass Avenue, Detroit, Michigan.

How Stewart-Warner Mechanical Power Brakes Work

The human foot on the Stewart-Warner Brake Pedal—no higher than a foot accelerator—



controls this Mechanical Foot which harnesses the giant force of car momentum to apply—



these "non-grabbing" Stewart-Warner rigid, two-shoe, non-energizing Wheel Brakes.

BRAKE SYSTEMS

New Technical Books

The McGraw-Hill Publishing Company, New York city, has just brought out two new technical works. One of these is "A Textbook of Metallurgical Problems," by Allison Butts, associate professor of metallurgy at Lehigh University. The second is "Chemical Analysis by X-Rays and Its Applications," by George von Hevesy, professor of physical chemistry at the University of Freiburg.

The table of contents of Professor Butts' book shows the comprehensive nature of its review of metallurgical problems, as follows: 1. Quantities and Units. 2. The Chemical Equation. 3. Combustion. 4. Manufacture of Coke and Producer Gas. 5. Thermochemistry and Thermophysics. 6. Charge and Product Calculations in the Metallurgy of Iron and Steel. 7. The Heat Balance. 8. Production of Blast and Draft. 9. Calculation of Charges for Smelting. 10. Alloys. 11. Drying and Calcining. 12. Roasting and Sintering. 13. Copper Smelting and Converting. 14. Electrolytic Processes. 15. Hydrometallurgy. 16. Volatilization of Metals in Melting. 17. Metallurgy of Lead. 18. Transmission of Heat. 19. Distillation Processes. 20. Vapor Pressure and Temperature-presure Relations in Chemical Reactions. 21. Therodynamics of Chemical Reactions. 22. Tables, Index.

BOSTON GOLF

Boston, Mass., Sept. 23. — James A. Travers is in charge of the annual golf tournament of the Boston Automobile Dealers, set for September 28 at the Commonwealth Country Club.

CUMULATIVE NEW PASSENGER CAR

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New York city, are included in the New York state total. Some of this data has been published previously, but it given here complete for the convenience of

Returns for today: Alabama, California, Connecticut, Louisiana, Massachusetts, Missouri, Nebraska, New

In this table 36 states and the District of Columbia

States	AUBURN GROUP			CHRYSLER GROUP					FORD GROUP			GENERAL MOTORS GROUP						
	Auburn	Cord	Totals	Chrysler	De Soto	Dodge	Plymouth	Totals	Ford	Lincoln	Totals	Buick	Cadillac	Chevrolet	La Salle	Oldsmobile	Pontiac	Totals
Alabama	3		3	12	6	11	40	69	268	2	270	20		273	1	1	18	313
Arkansas	3		3	2	4	14	25	45	210		210	3		205		3	12	223
California	138	2	140	138	168	153	516	975	2568	24	2592	183	32	1067	21	100	138	1541
Connecticut	25		25	41	44	32	214	331	357	7	364	58	7	333	8	20	70	496
Delaware	1		1	5	5	1	11	22	112	2	114	17		92		3	11	123
Florida	19		19	13	6	11	80	110	374	4	378	14		314	1	5	29	363
Idaho	3		3	2	4	5	15	26	79		79	5	1	59	1	4	5	66
Illinois	107	1	108	114	172	119	622	1027	1593	25	1618	174	31	1255	35	144	155	1794
Indiana	36		36	50	99	49	287	485	839	7	846	60	1	642		37	67	807
Iowa	6		6	20	13	35	104	172	560	3	563	38	1	524	3	16	56	638
Kansas	14		14	23	31	30	125	209	577	4	581	33	2	511		20	55	621
Louisiana	9		9	12	7	26	49	94	457	4	461	16	4	361		14	18	413
Maryland	25		25	38	25	20	126	209	576	1	577	25	5	504		26	65	625
Massachusetts	42		42	70	40	74	450	634	1073	16	1089	159	13	875	15	93	214	1369
Michigan	37	1	38	81	86	61	480	708	2001	18	2019	85	32	1031	22	101	128	1399
Minnesota	14		14	38	23	34	221	316	777	5	782	28	3	681	2	46	78	838
Missouri	25		25	56	69	57	329	511	1026	6	1032	66	5	951	7	46	116	1191
Montana				5	5	4	35	49	88		88	9		100		1	13	123
Nebraska	2		2	14	8	13	59	94	374	1	375	39		283	3	27	29	381
New Hampshire	2		2	10	8	7	46	71	95		95	14		87		8	12	121
New Jersey	58	1	59	92	96	50	567	805	1109	12	1121	163	24	1024	22	97	190	1520
New Mexico						2	11	13	108		108	5		57		1	8	71
North Carolina	11		11	29	7	23	79	138	607	2	609	20	3	474	1	13	35	546
Ohio	75	3	78	92	148	85	607	932	1839	18	1857	128	18	1181	12	118	181	1638
Oklahoma	14		14	16	18	31	97	162	491	1	492	31	4	571	3	13	65	687
Oregon	3		3	11	11	9	32	63	212	1	213	17		101		5	13	136
Pennsylvania	113	2	115	218	187	157	1159	1721	2331	14	2345	271	26	1782	24	143	278	2526
Rhode Island	10		10	20	17	8	70	115	171	1	172	32		146	2	11	32	223
South Carolina	3		3	7	8	8	40	63	291		291	16		198		2	9	225
South Dakota	1		1	6	3	10	37	56	149		149	9		120		6	9	144
Utah	3		3		4	2	5	11	66		66	12		29			4	45
Vermont	3		3	7	5	7	37	56	108		108	12		97		9	18	136
Virginia	10		10	12	28	37	97	174	679	2	681	25	3	538	2	13	61	642
Washington	10	1	11	21	16	23	90	150	347	3	350	35	4	200	1	29	36	305
West Virginia	9	1	10	22	11	23	102	158	332	2	334	14	1	247	1	9	28	300
Wisconsin	14		14	22	28	41	207	298	575	1	576	52	3	463	10	39	58	625
Dist. of Columbia	27		27	16	21	13	82	132	407	6	413	24	4	304	3	17	32	384
Line Total	875	12		1335	1431	1285	7153		23826	192		1912	229	17671	200	1240	2346	
Group Total			887					11204			24018							23598
Alabama, 1931	9		9	6	7	7	67	87	360		360	21	3	463			14	501
Arkansas, 1931	3		3	21	9	20	98	148	354		354	13		410	1	6	30	460
California, 1931	271	5	276	322	326	324	1041	2013	3222	29	3251	643	80	2625	43	187	284	3862
Connecticut, 1931	60	1	61	93	84	105	318	600	493	4	497	173	15	590	10	61	187	1036
Delaware, 1931	4		4	21	3	1	36	61	128		128	23	4	130	1	10	14	182
Florida, 1931	24		24	42	14	24	198	278	625	2	627	49	5	531	5	19	75	684
Idaho, 1931	9		9	7	9	12	52	80	127		127	16		147		7	14	184
Illinois, 1931	215	12	227	316	240	268	1196	2020	2788	22	2810	410	56	2486	48	348	500	3848
Indiana, 1931	75	9	84	111	136	127	652	1026	858	4	862	148	8	1233	4	125	192	1710
Iowa, 1931	29	1	30	66	33	110	413	622	897	5	902	87	10	1281	7	74	161	1620
Kansas, 1931	24		24	27	19	49	184	279	508	1	509	61	2	827		30	97	1017
Louisiana, 1931	9	2	11	33	27	47	96	203	497		497	29	1	559	3	12	37	641
Maryland, 1931	32		32	81	28	53	255	417	727	3	730	86	2	1017	3	36	164	1308
Massachusetts, '31	95	2	97	151	85	218	900	1354	1815	22	1837	350	35	1424	27	224	351	2411
Michigan, 1931	38	1	39	148	73	160	1371	1752	1133	19	1152	179	29	1179	10	143	195	1735
Minnesota, 1931	30	1	31	114	35	60	661	870	752	5	757	100	9	1069	5	104	162	1449
Missouri, 1931	63	2	65	85	69	164	556	874	1492	3	1495	176	11	2141	13	130	198	2669
Montana, 1931	8		8	17	12	24	64	117	156		156	26		167		9	32	234
Nebraska, 1931	12		12	29	13	39	192	273	543	2	545	53		637	1	29	58	778
N. Hampshire, '31	9		9	9	6	9	114	138	161		161	21	1	143	1	14	39	219
New Jersey, 1931	121	1	122	252	86	158	668	1164	1385	15	1400	418	68	1801	36	238	290	2851
New Mexico, 1931	1		1	7		16	20	43	104	1	105	26		89		7	8	130
N. Carolina, 1931	24	1	25	73	16	63	243	395	935	2	937	69	3	880	1	25	88	1066
Ohio, 1931	101	3	104	192	177	183	1321	1873	1685	10	1695	186	26	1730	17	207	301	2467
Oklahoma, 1931	11		11	26	11	61	140	238	433	1	434	66	1	697	1	18	70	853
Oregon, 1931	15		15	25	29	19	106	179	216		216	32	7	261	5	17	27	349
Pennsylvania, '31	248	4	252	562	267	422	2138	3389	2695	25	2720	652	67	3447	52	335	621	5174
Rhode Island, 1931	24	1	25	55	65	39	145	304	290	1	291	75	9	275	6	7	69	441
So. Carolina, '31	12	1	13	28	13	19	114	174	479		479	33		535	1	12	47	628
South Dakota, '31	3	1	4	16	12	21	90	139	182	1	183	13		244		35	26	318
Utah, 1931	1		1	6	4	4	8	22	83		83	20	2	63	1	2	7	95
Vermont, 1931	8		8	19	12	15	96	142	152	2	154	37	3	137	1	22	37	237
Virginia, 1931	21		21	83	58	80	235	456	1038	2	1040	88	10	1262	3	57	140	1560
Washington, 1931	14	3	17	45	49	50	294	438	370		370	86	5	406	3	40	75	615
W. Virginia, 1931	30	1	31	59	19	95	277	450	500	3	503	39	4	464	3	41	76	627
Wisconsin, 1931	43	3	46	73	53	95	486	707	671	4	675	135	13	924	11	65	203	1351
Dist. of Col., 1931	22		22	42	33	41	183	299	590	1	591	70	10	495	8	72	75	730
Line Total, 1931	1718	55		3262	2132	3202	15028		29444	189		4709	499	32769	331	2768	4964	
Group Total, 1931			1773					23624			29633							46040

*Not in production.

MOTOR TRUCK ACCIDENT RESPONSIBILITY PASSED ON TO MERCHANDISE BUYERS

Paterson, N. J., Sept. 23.—Textile shippers have taken action against assuming responsibility for accidents due to motor truck transport. To make their position clear to customers the following is a sample of notice to buyers:

"Our attention has been directed to claims and losses resulting from fire, theft and other causes, where the operators of motor trucks have been unable or unwliling to indemnify owners of the merchandise. We also are advised of litigation arising out of accidents involving trucks where recovery from owners of merchandise is attempted when judgment for personal or property damages against the trucking company would be successful.

"Where shipment by truck is stipulated by purchaser, it must be distinctly understood that the mill does not assume any responsibility whatever in the selection of the motor transport line, but is merely carrying out the instructions of the buyer to the best of its ability. While goods sold by us are strictly f. o. b. wherein title passes to purchaser upon delivery to the carrier (whether railroad or truck), we are taking the liberty of bringing this situation to your attention for such action or benefit that it may be to you."

HIGHWAY GROUPS FORMED

Washington, Sept. 23.—An organization styling itself the National Highway Protective Association, with headquarters in Spokane, Wash, has been launched by L. S. Case, lumber dealer of the far Western metropolis. According to an announcement made public here, the movement is intended to advocate Federal, state and township legislation "to reduce the unwarranted use of public highways for private profit."

REGISTRATION STATISTICS, AUGUST, 1932

New Jersey, which are furnished by the New Jersey Motor List Co, New Car Division, Trenton, N. J. Metropolitan district figures, compiled by Sherlock & Arnold, our subscribers. Readers desiring county, city, or town lists, or lists of owners in any given section may obtain these by addressing any of these three companies.

Hampshire, New Jersey, New Mexico, Oklahoma, Oregon, Pennsylvania, South Dakota, Vermont and Washington

States	HUDSON GROUP			STUDEBAKER GROUP				WILLYS-OV'D GROUP			NON-AFFILIATED MANUFACTURERS									State Total
	Essex	Hudson	Totals	Pierce-Arrow	Rockne	Studebaker	Totals	Willys-Overland	Willys-Knight	Totals	De Vaux	Franklin	Graham	Hupmobile	Marmon	Nash	Packard	Reo	Miscellaneous	
Alabama	12		12		9	7	16	19	1	20				2		2	2	2	3	714
Arkansas	1	1	2		5	2	7	2	1	3			1	1		4		1		500
California	156	15	171	27	262	175	464	52	27	79	25	10	130	47	1	81	50	27	13	6,346
Connecticut	76	13	89	4	45	28	77	15	3	18		5	13	9	5	31	28	6	3	1,500
Delaware	8		8		2	1	3	5		5		1		2		7	3			289
Florida	29	5	34		4	6	10	13		13		6	9	4	2	9	3	2	100	1,062
Idaho	8	1	9		5	3	8						1			6				198
Illinois	215	33	248	11	98	125	234	156	16	172		12	81	28	3	89	68	20	7	5509
Indiana	74	25	99		75	37	112	65	4	69	4	3	31	9	22	17	11	7	2	2,560
Iowa	82	10	92	1	26	25	52	36		36	3		6	4		13	8	3	1	1,597
Kansas	30	7	37	3	34	19	56	31	4	35		2	8	7		22	4	5		1,601
Louisiana	12	1	13		20	8	28	4		4		3	4	1		22	5	2	24	1,083
Maryland	69	10	79		23	21	44	28	2	30		5	22	4	1	17	10	1	6	1,655
Massachusetts	319	34	353	16	91	81	188	46	8	54	2	18	49	39	5	107	57	22	12	4,040
Michigan	425	29	454	6	80	45	131	39	2	41	6	1	82	22		28	37	30	2	4,998
Minnesota	64	8	72	3	42	39	84	62	5	67	1	1	33	19		24	26	11	2	2,290
Missouri	99	8	107	12	38	35	85	56	4	60	1		41	22	3	25	16	14	4	3,137
Montana	8	2	10		3	4	7	5	2	7		2				5	2	1	3	297
Nebraska	25	4	29	1	19	8	28	16	3	19			7	3		8		4		950
New Hampshire	24	1	25		11	4	15	7	2	9			12			9			1	360
New Jersey	173	27	200	26	96	63	185	57	16	73	2	8	48	25	4	76	48	16	3	4,193
New Mexico	1		1		5	1	6						1				1			201
North Carolina	60	3	63		10	4	14	10		10			2	1		1	2		22	1,419
Oklahoma	20	2	22	3	12	7	22	14	1	15			6			7	7	1		1,435
Oregon	11	4	15	1	13	11	25	11	4	15		1	10	1	1	11		2	1	497
Ohio	311	32	343	5	80	62	147	127	11	138	3	13	84	35	5	53	56	18	5	5,405
Pennsylvania	335	31	366	10	140	105	255	232	19	251	13	16	119	74	5	107	72	36	17	8,038
Rhode Island	47	6	53	3	23	15	41	14		14	1	4	5	5	1	9	8	2	2	665
South Carolina	10	1	11		7	1	8						1	6		1	1		4	614
South Dakota	8		8		11	7	18	6		6	1			3		3				389
Utah	4		4		3	1	4					1	4			4	1			143
Vermont	30	5	35	1	14	2	17	19		19			4	3		3	4	2	1	391
Virginia	61	9	70	1	15	13	29	22		22		2	19	11	1	10	6	1	2	1,680
Washington	15	7	22	3	34	24	61	14	1	15	2	5	23	1		20	11	3	3	982
West Virginia	38	5	43		17	11	28	25	2	27			18	5		8	5	5	2	943
Wisconsin	100	10	110	2	37	30	69	61	4	65	3	1	19	5		31	18	4	2	1840
Dist. of Columbia	34	3	37	6	21	43	70	17	2	19			23	29		12	16		1	1,163
Line Total	2994	352		145	1430	1073		1286	144		67	120	916	427	59	882	586	248	248	70,684
Group Total			3346				2648			1430										
Alabama, 1931		1	1			14	14	23		23	1	1	1	3		13	6			1,020
Arkansas, 1931	2	1	3			9	9	6	1	7			11	1		12	1	2	7	1,018
California, 1931	93	78	171	15		365	380	157	51	208	158	15	119	102	14	296	110	39	120	11,134
Connecticut, 1931	56	32	88	14		63	77	28	10	38	27	5	35	21	9	81	50	21	7	2,653
Delaware, 1931	5		5			3	3	1		1	2	1	1			7	7		7	409
Florida, 1931	25	25	50			18	18	18	2	20	3	4	18	8	7	24	10	2	6	1,783
Idaho, 1931	2	6	8			6	6	13	1	14	7	1	4	2		10			6	458
Illinois, 1931	164	71	235	22		215	237	168	57	225	31	19	83	79	16	332	143	29	70	10,404
Indiana, 1931	104	26	130	1		102	103	137	13	150	10	4	38	32	25	65	16	5	15	4,275
Iowa, 1931	58	36	94			58	58	92	12	104	20	2	27	16	5	50	28	1	26	3,605
Kansas, 1931	47	25	72			37	37	44	7	51	2		9	12	4	34	5	5	15	2,075
Louisiana, 1931	12	7	19	1		19	20	9		9	3		4	14	3	43	9	5	3	1,489
Maryland, 1931	69	18	87	2		35	37	38	11	49	2	3	31	32	4	56	23	7	29	2,847
Massachusetts, '31	258	91	349	31		192	223	92	30	122	14	28	65	79	15	275	103	26	36	7,034
Michigan, 1931	123	61	184	2		33	35	34	11	45	30	2	50	39	14	47	55	19	21	5,219
Minnesota, 1931	51	33	84	3		71	74	92	16	108	6		45	39	1	53	33	16	14	3,580
Missouri, 1931	72	24	96	6		78	84	141	28	169	6	2	47	43	12	112	26	18	38	5,756
Montana, 1931	12	11	23			12	12	25	7	32	8	2	2	2		12		6	6	620
Nebraska, 1931	14	7	21			39	39	50	15	65	4		5	13		24	3	2	8	1,792
N. Hampshire, '31	12	6	18	1		10	11	6	7	23	2	5	9	2	2	20	4	2	3	628
New Jersey, 1931	131	54	185	22		220	242	79	51	130	44	13	63	71	11	285	84	23	73	6,761
New Mexico, 1931	2	6	8			2	2	8		8	1	1			2	9			4	314
N. Carolina, 1931	40	14	54	3		15	18	28	2	30	5	2	7	2	2	10	8	1	2	2,564
Ohio, 1931	169	63	232	12		148	160	168	74	242	22	18	76	60	24	163	73	22	40	7,271
Oklahoma, 1931	6	9	15	5		18	23	13	2	15	1		3	3	1	13	8	6	3	1,627
Oregon, 1931	3	8	11	2		16	18	9	2	11	12	1	21	3	1	18	5	4	11	875
Pennsylvania, '31	305	130	435	27		294	321	338	79	417	52	29	181	133	46	377	188	32	91	13,837
Rhode Island, 1931	40	6	46	8		34	42	15	9	24	5	5	7	18		39	7	5	10	1,269
So. Carolina, '31	18	11	29			11	11	10	1	11	4		4	7		2	4	2	1	1,369
South Dakota, '31	8	6	14			10	10	18	1	19	13		2	4		13	5		6	730
Utah, 1931	7	3	10			6	6	2	1	3	6		10	3		8	2		1	250
Vermont, 1931	31	11	42			11	11	26	1	27	1	1	4	10		14	11	2	6	670
Virginia, 1931	54	23	77	4		40	44	56	3	59			18	32	4	32	21	1	8	3,373
Washington, 1931	13	15	28	3		49	52	45	10	55	14	5	21	6		50	9	8	25	1,713
W. Virginia, 1931	28	12	40	1		15	16	70	6	76	11	2	36	14	5	38	14	4	2	1,869
Wisconsin, 1931	49	20	69	7		72	79	71	16	87	15	3	38	17	3	160	28	11	17	3,306
Dist. of Col., 1931	28	12	40	3		35	38	14	10	24	1	3	22	27	8	46	26	5	6	1,888
Line Total, 1931	2111	962		195		2375		2154	547		543	177	1117	949	238	2848	1125	331	743	117,485
Group Total, 1931			3073				2570			2701										

ON THE OTHER HAND

BOOKS $850,000 BUSINESS

New York, Sept. 23.—General Bronze Corporation during August booked $50,000 of business. In all 1931 gross business was $5,456,971. New contracts received by General Bronze included work for the Philadelphia Post Office Building, the Newark Post Office Building, the Minneapolis Post Office Building and the Department of Justice Building in Washington. The company has reduced its overhead expenses by 60 per cent.

At the beginning of September cash held by the company was in excess of $1,750,000.

RUNNING AT CAPACITY

Bristol, Pa., Sept. 23.—The William H. Grundy Company plant here is operating 100 per cent. of capacity, a more active rate than this worsted yarn spinning producer has experienced in five years. Every spindle and comb in the mill is in operation to fill the large volume of worsted knitting yarn orders booked during the last six weeks, most of which will go into the manufacture of sweaters.

CAR LOADINGS GAIN

New York, Sept. 23.—Indications that freight car loadings would show the sharpest rise reported so far this year for the week of September 17, were given during the last few days as preliminary figures coming in from twelve railroads from various sections of the country showed an average rise of 18.2 per cent. from a year ago.

For the week ended September 10, which included the Labor Day holiday, loadings totaled 502,000 cars. Based on the preliminary figures, total loadings for the week ended September 17 should approach the 600,000 mark very closely.

For the week ended September 17, the New York Central handled 89,945 revenue freight cars, including those received from connections, against 74,135 cars in the preceding week, and 111,309 cars in the like week a year ago. Cars originating on the line totaled 40,743 cars in the week ended September 17, as against 32,778 cars in the previous week, and 51,850 cars a year ago.

President L. W. Baldwin of the Missouri Pacific Railroad reports that his road experienced a continued gain in car loadings during the first three days of the week.

SEES SLOW BUSINESS GAIN

Atlantic City, N. J., Sept. 23.—Although the bottom of the depression was reached last spring, it may be a year before the remaining problems are overcome to a point where any notable business increase will be apparent. Raleigh S. Rife, economist of the Guaranty Trust Company of New York, said today at the semi-annual sessions of the Glass Container Association of America here.

"Coming prosperity is not definite," he said, "but the favorable aspect is that this year is the first since 1928 that there has been any seasonal increase in business."

Charles R. Stevenson of New York said repeal of the Eighteenth Amendment would result in a big increase of the container industry.

"In normal times," he said, "this is a $125,000,000 industry. More than 18,000,000 gross of bottles are made and used in this country annually, or approximately twenty-eight for each man, woman and child. The industry is now running 40 per cent. of capacity, but the outlook is promising."

CHICAGO TRADE IMPROVES

Chicago, Sept. 23.—Wholesale merchants in the Chicago market area report a steady volume of orders for seasonal wearing apparel and household necessities, according to R. G. Dun & Co. Retail trade was slowed up somewhat, due to return of warmer weather.

Reports from all leading lines of trade and industry are mainly favorable, according to Bradstreet's. Recent gains have been held and small improvements in different lines still are noticeable. A large number of buyers from the West and Northwest visited wholesale houses here during the past week.

MILLMEN AWAIT CHAPIN

Boston, Sept. 23.—Secretary of Commerce Roy D. Chapin will make his first appearance in New England as a cabinet officer Thursday evening, September 29, as the principal speaker at the annual dinner of the National Association of Cotton Manufacturers.

His views as to the general business outlook will be welcomed by the cotton manufacturers in this section of the country, the majority of whom feel that while the situation has brightened, night running and its consequent overproduction can easily destroy the present gains made by the industry.

STEPPING UP PRODUCTION

Quincy, Fla., Sept. 23.—The Havana Florida Cigar Company of Quincy, wholesale manufacturer, reports that its August business increased 100 per cent. over the same period last year.

Officials said that production was being stepped up, with night shifts working to meet the increased demand.

MILL ON FULL TIME

Fall River, Mass., Sept. 23.—The Kerr Thread Mill, Fall River plant of the American Thread Company, is working on a full week basis now. The plant, which employs more than 1,400 workers, had been on a three and four-day basis.

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS

Make and Model	Weight—5-P. Sedan	Wheel Base	Engine Make	Thermostat Used	Valve Arrangement	Cylinders	Bore and Stroke	Piston Disp.	Compression Ratio	Tax H. P.	Brake, H.P. and Peak R. P. M.	Pist. Make or Material	No. Main Br.	Oil Purifier	Fuel Cleaner	Carburetor	Air Cleaner
Auburn 8-100	3675	127-136	Lyc	Dole	L	8	3 x4¾	268.6	5.26	28.8	100@3400	*Alum	5	Pur	No	Str	AC
Auburn 12-160	4465	133	Lyc	Dole	HO	12	3⅛x4¼	391.1	5.50	46.8	160@3400	*Alum	4	Pur	Ste	Str	AC
Austin	§1150	75	Own	No	L	4	2.2 x3	45.6	5.10	7.80	13@3000	Alum	2	No	No	Til	No
Buick 32-50	3450	114	Own	Bish-Bab	O	8	2⅞x4¼	230.4	5.09	27.61	82@3200	CI	5	AC	AC	Mar	AC
Buick 32-60	3980	118	Own	Bish-Bab	O	8	3⅛x4⅝	272.6	5.03	30.02	95@3000	CI	5	AC	AC	Mar	AC
Buick 32-80	4450	126	Own	Bish-Bab	O	8	3⅛x5	344.8	4.80	35.12	113@3200	CI	5	AC	AC	Mar	AC
Buick 32-90	4565	134	Own	Bish-Bab	O	8	3⅛x5	344.8	4.80	35.12	113@3200	CI	5	AC	AC	Mar	AC
Cadillac 355 B	4885	134-140	Own	Har	L	8	3⅜x4⅛	353.0	5.38	36.4	115@3000	CI	3	AC	AC	Own	AC
Cadillac 370 B	5175	134-140	Own	Har	O	12	3⅛x4	368.0	5.30	46.9	135@3400	CI	4	Cuno	AC	DL	AC
Cadillac 452 B	5625	143-149	Own	Har	O	16	3 x4	452.0	5.36	57.5	165@3400	CI	5	Cuno	AC	DL	AC
Chevrolet	2770	109	Own	No	O	6	3⅛x3¾	194.0	2.50	26.3	60@3000	CI	3	No	Yes	Car	AC
Chrysler 6	3120	116	§Own	Yes	L	6	3¼x4½	223.9	5.35	25.35	82@3400	*Alum	4	Pur	Yes	*B&P	Yes
Chrysler 8	3860	125	§Own	Yes	L	8	3¼x4½	298.6	5.20	33.80	100@3400	*Alum	5	Pur	Yes	Str	Yes
Chrysler Imp. 8	——	135	§Own	Yes	L	8	3½x5	384.8	5.20	39.20	125@3200	*Alum	9	Pur	Yes	Str	Yes
Chrysler Imp. 8 cus.	——	146	§Own	Yes	L	8	3½x5	384.8	5.20	39.20	125@3200	*Alum	9	Pur	Yes	Str	Yes
Cord (Fr. Wh. D.)	4620	137½	Lyc	Dole	L	8	3¼x4½	298.6	5.25	33.8	115@3300	*Alum	5	Pur	AC	Sch	No
De Soto Six	3008	113	§Own	Yes	L	6	3¼x4¼	211.5	5.35	25.35	75@3400	*Alum	4	Pur	Yes	*B&B	Yes
De Vaux 6-80	2810	114	Con	Dole	L	6	3⅜x4	214.7	5.20	27.34	75@3600	Alum	4	—	Yes	Til	AC
Dodge Six D L	3084	114¼	§Own	Yes	L	6	3¼x4⅜	217.7	5.35	25.35	79@3400	*Alum	4	Pur	Yes	Car	Yes
Dodge Eight D K	3488	122	§Own	Yes	L	8	3¼x4¼	282.1	6.20	33.80	100@3400	*Alum	5	Pur	Yes	Str	Yes
Essex Terraplane	2400	106	Own	——	L	6	2⅞x4¾	193.0	5.80	20.7	70@3200	Alum	3	No	Yes	Car	Yes
Essex-Gr. Su. 6 Std.	2870	113	†Own	No	L	6	2⅞x4¾	193.0	5.50	20.7	70@3200	Alum	3	No	Ste	Mar	AC
Ford A	2357	106	Own	No	L	4	3⅛x4¼	200.5	4.60	24.03	50@2600	Alum	3	—	—	Zen	—
Ford V8	†2447	106	Own	No	L	8	3⅛x3¾	220.0	5.50	30.0	65@3400	Alum	3	—	—	DL	—
Franklin Series 16	——	132	*Own	Ful	O	6	3½x4¾	274.0	5.12	29.4	100@3100	*Alum	7	Pur	Yes	Str	Yes
Franklin V-12	——	144	*Own	Ful	O	12	3¼x4	398.0	5.12	50.8	150@3100	*Alum	7	Pur	Yes	Str	Yes
Graham 6 (1933)	——	118	Own	Yes	L	6	3¼x4½	224.0	6.50	25.35	80@3400	*Alum	7	No	AC	Sch	AC
Graham 6	3205	113	Own	Yes	L	6	3¼x4½	207.0	5.45	23.4	70@3200	*Alum	7	No	AC	Sch	AC
Graham 8	3665	123	Own	Bish-Bab	L	8	3¼x4	245.4	6.50	31.25	90@3400	*Alum	5	AC	AC	DL	AC
Hudson Gr. 8 Std.	3270	119-126-132	†Own	No	L	8	3 x4½	254.1	5.80	28.8	101@3600	Alum	5	No	Ste	Mar	AC
Hupmobile 216	3115	116	Own	Bish-Bab	L	6	3⅜x4⅛	228.1	5.00	27.34	75@3200	*Alum	4	**	Ste	Str	AC
Hupmobile 222	3580	122	Own	Bish-Bab	L	8	2⅞x4⅝	250.7	5.40	27.61	93@3200	Alum	5	Pur	Ste	Str	AC
Hupmobile 226	3755	126	Own	Bish-Bab	L	8	3⅛x4¾	279.9	5.47	30.10	103@3200	Alum	5	Pur	Ste	Str	AC
La Salle 345 B	4840	130-136	Own	Har	L	8	3⅜x4⅛	353.0	5.38	36.4	115@3000	CI	3	AC	AC	Own	AC
Lincoln V-8	5430	136	Own	Yes	L	8	3½x5	384.0	5.23	39.2	125@2900	Alum	5	No	AC	Str	AC
Lincoln V-12	5750	145	Own	Yes	L	12	3¼x4½	448.0	5.25	50.7	150@3400	Alum	7	No	AC	Str	AC
Marmon 8	3500	125	Own	Yes	L	8	3¼x4¾	315.2	5.50	33.8	125@3400	Alum	5	Flo	AC	Str	AC
Marmon 16	5360	145	Own	Pines	O	16	3¼x4	490.8	5.75	62.5	200@3400	Alum	5	†	AC	Str	AC
Nash Big Six	3200	116	Own	Bish-Bab	L	6	3⅛x4⅝	201.3	5.10	23.4	70@3000	*Alum	7	Pur	AC	Str	AC
Nash Stand. Eight	3400	121	Own	Bish-Bab	L	8	3 x4⅜	247.4	5.10	28.8	85@3200	*Alum	9	Pur	AC	Str	AC
Nash Spec. Eight	3870	128	Own	Bish-Bab	O	8	3⅛x4¼	260.8	5.25	31.2	100@3400	*Alum	9	Pur	AC	Str	AC
Nash Adv. Eight	4350	133	Own	Bish-Bab	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	*Alum	9	Pur	AC	Str	AC
Nash Ambas. Eight	4510	142	Own	Bish-Bab	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	*Alum	9	Pur	AC	Str	AC
Oldsmobile F-32	3035	116½	Own	No	L	6	3⅛x4⅛	213.3	5.80	26.3	74@3200	CI	4	AC	AC	Str	AC
Oldsmobile L-32	3165	116½	Own	No	L	8	3 x4¼	240.3	5.90	28.8	87@3350	CI	5	AC	AC	Str	AC
Packard Twin Six	5635	142⅛-147⅛	Own	Yes	L	12	3⅞x4	445.5	6.00	56.7	160@3200	*Alum	4	Yes	Yes	Own	AC
Packard Std. 8	4570	130-137	Own	Yes	L	8	3⅛x5	320.0	6.00	32.5	110@3200	*Alum	9	Yes	Yes	Own	AC
Packard De L. 8	5045	142-147	Own	Yes	L	8	3½x5	384.8	6.00	39.2	135@3200	*Alum	9	Yes	Yes	Own	AC
Packard Light 8	4115	127¾	Own	Yes	L	8	3⅛x5	320.0	6.00	32.50	110@3200	*Alum	9	Yes	Yes	Own	AC
Pierce-Arrow 54	4819	137-142	Own	Pines	L	8	3½x4⅝	366.0	5.05	39.2	125@3000	*Alum	9	Pur	Ste	Str	AC
Pierce-Arrow 52	5080	142-147	Own	Pines	L	12	3⅜x4	429.0	5.05	54.6	150@3200	*Alum	7	Pur	Ste	Str	AC
Pierce-Arrow 53	5395	137-142	Own	Pines	L	12	3¼x4	398.0	5.05	50.7	140@3200	*Alum	7	Pur	Ste	Str	AC
Plymouth	2875	112	§Own	No	L	4	3⅝x4¾	196.1	4.90	21.03	65@3000	Alum	3	Yes	AC	*B&B	Yes
Pontiac 6	2870	114	Own	Yes	L	6	3⅛x3⅞	200.0	5.10	26.3	65@3200	CI	3	No	AC	Mar	Yes
Pontiac V-8	3225	117	Own	Yes	H	8	3⅛x3⅝	251.0	5.20	37.8	85@3200	CI	3	No	AC	Mar	Yes
Reo Fly. Cloud "S"	3405	117	Own	Yes	L	6	3⅛x5	230.0	5.30	23.4	80@3200	Lo-Ex	7	Yes	Yes	Zen	Yes
Reo Royale Cust.	4650	135	Own	Pines	L	8	3⅜x5	358.0	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo Royale	4375	131	Own	Pines	L	8	3⅜x5	358.0	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo 8-25	4050	125	Own	Yes	L	8	3 x4¾	268.6	5.37	28.8	90@3300	*Alum	5	Han	V S	Sch	Un
Rockne 6-65	2595	110	Own	Dole	L	6	3⅛x4⅛	189.8	5.00	23.4	66@3200	CI	4	No	AC	Str	No
Rockne 6-75	3000	114	Own	Dole	L	6	3¼x4⅛	205.3	5.00	25.4	72@3200	CI	4	Own	AC	Str	No
Studebaker 6-55	3170	117	Own	Dole	L	6	3¼x4⅝	230.0	5.00	25.4	80@3200	CI	4	No	Ste	Str	No
Studebaker Dict. 62	3240	117	Own	Bish-Bab	L	8	3⅛x3⅞	221.0	5.00	30.0	85@3200	CI	9	Pur	Ste	Str	AC
Studebaker Com. 71	3545	125	Own	Bish-Bab	L	8	3⅛x4¼	250.4	5.20	30.0	101@3200	*Alum	9	Pur	Ste	Str	AC
Studebaker Pres. 91	4260	135	Own	Dole	L	8	3½x4⅜	337.0	5.10	39.2	122@3200	*Alum	9	Han	Ste	Str	AM
Stutz LAA	4383	127½	Own	No	O	6	3⅜x4½	241.5	5.50	27.3	85@3150	*Alum	7	Pur	AC	Zen	UN
Stutz SV-16	4885	134½-145	Own	No	O	8	3⅜x4½	322.0	5.10	36.4	156@3900	*Alum	9	Pur	AC	Zen	AM
Stutz DV-32	*5281	134½-145	Own	Bish-Bab	O	8	3⅜x4½	322.0	5.50	36.4	113@3300	*Alum	9	Pur	Ste	Str	AC
Will.-Ov'land 6-90A	2814	113	Own	Yes	L	6	3¼x3⅞	193.0	5.26	25.35	65@3400	CI	4	No	AC	Til	Til
Will.-Ov'land 8-88A	3250	121	Own	Yes	L	8	3⅛x4	245.4	5.26	31.25	80@3200	CI	5	No	AC	Til	AC
Willys-Knight 66E	3775	121	Own	Yes	K	6	3⅜x4⅝	255.0	5.50	27.34	87@3200	*Alum	7	Pur	Til	Til	AC

HARDNESS TESTING INSTRUMENT BULLETINS

The R. Y. Ferner Company is putting out a number of bulletins regarding the use of portable hardness testing instruments, as follows:

Bulletin H-2 discusses the use of the Duroskop in the hardening of steel and the selection of stock to give a desired hardness after hardening.

Bulletin H-3 covers conversion curves for converting Duroskop readings to hardness numbers of the Brinell, Rockwell and Scleroscope systems.

Bulletin H-4 is our current catalogue on the Duroskop, Dwarf Brinell Press and Triplex set of portable hardness testing instruments.

Bulletin H-5 tells of a special form of the Duroskop designed for the testing of wire, drill rod, needles and other small cylindrical material, and describes a hardened steel block for use in such tests.

Bulletin H-6 describes a Dwarf Brinell Press now available, which is adapted to the test of soft metals, using a 250-kg. load instead of 750 kg., with a 5-mm ball.

Bulletin H-7 covers a special laboratory Duroskop with variable height of fall of the pendlum, which can be adjusted by means of an angle scale on the back of the instrument. This is specially useful in testing the hardness of varnish and paint films, or in the test of soft metals or finished surfaces where a minimum of imprint from the testing instrument is essential.

Bulletin H-8 discusses the use of the Triplex set for the testing of cast iron surfaces, such as of lathe or planer beds or of engine blocks while being machined, to discover soft spots that necessitate rejection, thus saving the cost of useless machining.

Bulletin H-9 treats of the use of the Duroskop for testing the hardness and resiliency of plastic products, rubber, linoleum, fibre board, etc.

Bulletin H-10 tells of the usefulness of the Duroskop for the testing of all kinds of cermanic products, including brick, cement block, tile, chinaware, porcelain, enameled surfaces and glass.

Bulletin H-11 gives some results obtained in the use of the Duroskop for testing the hardness of wood, especially of woods artificially hardened by special treatment. The possibilities of testing the variations in hardness of different annual rings of growth of a tree are also discussed.

Buleltin H-12 discusses the use of the Duroskop in checking the hardness of cylinders and rolls while in the process of manufacture, to discover soft spots before carrying the machining needlessly far. The Duroskop can be used on such rolls while they are turning in the lathe or grinder. A method has been developed by which the Duroskop readings can be made in such work as rapidly as every two seconds.

Bulletin H-13 covers the use of the Duroskop for measuring especially the hardness of stone, gravel and concrete.

Bulletin H-14 describes some tests made with the Duroskop on various samples of thin sheet metal, copper, zinc, steel, etc., and shows how well different Duroskops agree, giving the average deviations of readings and the probable error of the means and of a single reading.

TAKES DODGE-PLYMOUTH

Tarentum, Pa., Sept. 23. — The Riverside Auto Company has surrendered the Ford franchise, held in this territory for thirteen years, and has taken over distribution of the Plymouth and Dodge automobiles and trucks for Tarentum and ten adjacent towns. J. C. Septer and W. Hood Logan are owners of the business.

OF PRESENT AMERICAN PASSENGER CAR MODELS

Make and Model	Front End Drive	Ignition System	Gen. and Starter	Clutch	Transmission Make	Transmission Speeds	Transmission Type	Universals	Rear Axle	Ratio	Brakes	Steering Gear	Springs Rear	Spring Shackles	Chassis Lubric.	Tires
Auburn 8-100	Chain	Del-R	*Del-R-S	Long	D	3	SM-LGS-F	U	Col	*4.70	M	Ross	S 56¾	Own	Bijur	*17x5.50
Auburn 12-160	Link	Del-R	*Del-R-S	Long	D	3	SM-LGS-F	M	Col ½	*4.08	Bendix	Ross	S 56¾	Own	Bijur	*17x6.00
Austin	Gear	Aut-L	*Aut-L	Rock	WG	3	——	S	Sal ½	5.25	M	Say-B	Cant	Own	Al-Z	18x3.75
Buick 32-50	Tex	Del-R	Del-R	*Own	O	3	SM-Own-F	O	Own ½	4.60	Own	Sag	S 56	Own	Al-Z	18x5.50
Buick 32-60	Tex	Del-R	Del-R	*Own	O	3	SM-Own-F	O	Own ¾	4.54	Own	Sag	S 55¼	Own	Al-Z	18x6.00
Buick 32-80	Tex	Del-R	Del-R	*Own	O	3	SM-Own-F	O	Own ¾	4.27	Own	Sag	S 58⅞	Own	Al-Z	18x7.00
Buick 32-90	Tex	Del-R	Del-R	*Own	O	3	SM-Own-F	O	Own ¾	4.36	Own	Sag	S 58⅞	Own	Al-Z	18x7.00
Cadillac 355 B	Morse	Del-R	Del-R	*Own	O	3	SM	S	Own ¾	4.60	Own M	Sag	S 58	Own	Alem	17x7.00
Cadillac 370 B	Morse	Del-R	Del-R	*Own	O	3	SM	S	Own ¾	4.80	Own M	Sag	S 58	Own	Alem	17x7.50
Cadillac 452 B	Morse	Del-R	Del-R	*Own	O	3	SM	S	Own ¾	4.64	Own M	Sag	S 60	Own	Alem	18x7.50
Chevrolet	Gear	Del-R	*Del-R	Own	O	3	SM-F	—	Own ½	4.10	M	Own	S 54	Own	Alem	18x5.25
Chrysler 6	Chain	Del-R	Del-R	†—	O	3	O-F	—	Own ½	4.60	H	Own	S 53⅜	——	Alem	18x5.50
Chrysler 8	Chain	Del-R	Del-R	*—	O	4	O-F	—	Own ½	4.30	H	Gem	S 54⅝	——	Al-Z	17x6.50
Chrysler Imp. 8	Chain	Del-R	Del-R	*—	O	4	O-F	—	Own ½	4.10	H	Gem	S 57½	——	Al-Z	17x7.00
Chrysler Imp. 8 cus.	Chain	Del-R	Del-R	*—	O	4	O-F	—	Own ½	4.10	H	Gem	S 57½	——	Al-Z	17x7.50
Cord (Fr. Wh. Dr.)	Link	Del-R	*Del-R	Long	D	3	——	*	Col F	4.80	H	Gem	S 62	Own	Bijur	18x7.00
De Soto Six	Chain	Del-R	Del-R	†Own	O	3	O-F	—	Own ½	4.62	H	Own	S 53⅜	——	Alem	18x5.25
De Vaux 6-80	Morse	Aut-L	*Aut-L	Borg	W	3	W-F	S	‡AD ½	4.40	M	†W	S 54¼	Tryon	Al-Z	19x5.25
Dodge Six D L	Chain	Del-R	—	†—	O	3	—— F	—	Own ½	4.60	H	Own	S 54⅞	——	Al-Z	18x5.50
Dodge Eight D K	Chain	Del-R	Del-R	*—	O	3	—— F	—	Own ½	4.10	H	Gem	S 55	——	Al-Z	18x6.00
Essex Terraplane	Gear	Aut-L	*Aut-L	Own	O	3	SM —	S	Own ½	—	Bendix	Gem	S 48	Own	Alem	17x5.25
Essex-Gr. Su. 6	Morse	Aut-L	*Aut-L-S	*Own	O	3	SM-WG-F	S	Own ½	4.63	Bendix	Gem	S 54½	Own	Alem	18x5.25
Ford A	Var-G	Own	*Own	Own	O	3	SM	O	Own ¾	4.11	M	Gem	S-Tr 39	Own	Al-Z	18x5.25
Ford V8	Var-G	Own	*Own	Own	O	3	SM	O	Own ¾	4.11	M	Gem	S-Tr	Own	Al-Z	18x5.25
Franklin Series 16	Chain	Del-R	*Del-R-S	Br-L	W	3	SM-BW-F	M	Own ½	4.73	H	Gem	El 42	——	Al-Z	19x6.50
Franklin V-12	Chain	Del-R	*Del-R-S	Long	W	3	SM-BW-F	M	Col ½	5.10	H	Ross	S 60	Fat	Al-Z	17x7.50
Graham 6 (1933)	Link	Del-R	Del-R	*Long	WG	3	SM	U	Sal ½	4.55	H	Ross	S 54	ERS	Al-Z	17x6.00
Graham 6	Link	Del-R	Del-R	Long	WG	3	WG-F	U	Sal ½	4.45	H	Ross	S 54	ERS	Al-Z	17x5.50
Graham 8	Link	Del-R	Del-R	Long	WG	3	SM-WG-F	S	Sal ½	4.30	H	Ross	S 54	ERS	Al-Z	17x6.00
Hudson Gr. 8	Morse	Aut-L	*Aut-L-S	*Own	O	3	SM-WG-F	S	Own ½	†4.63	Bendix	Gem	S 54⅛	Own	Alem	*17x6.00
Hupmobile 216	Chain	Aut-L	*A-L-S-‡	Borg	WG	3	SM-WG-F	M	Spic ½	4.54	M	Ross	S 53	Tryon	Al-Z	18x5.50
Hupmobile 222	Morse	Aut-L	*A-L-S-‡	Borg	WG	3	SM-WG-F	U	Own ½	4.36	M	Gem	S 57½	Rub-B	Al-Z	17x6.00
Hupmobile 226	Morse	Aut-L	*A-L-S-‡	Long	D	3	SM-DG-F	U	Own ½	4.36	M	Gem	S 57½	Rub-B	Al-Z	17x6.50
La Salle 345 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.60	Own M	Sag	S 58	Own	Alem	17x7.00
Lincoln V-8	Chain	Aut-L	*Aut-L	Long	O	3	SM-F	S	Own F	4.58	*Bendix	Own	S 62	Own	Alem	18x7.00
Lincoln V-12	Chain	Aut-L	*Aut-L	Long	O	3	SM-F	S	Own F	4.58	*Bendix	Own	S 62	Own	Alem	18x7.50
Marmon 8	Diam	Del-R	*Del-R	*—	D	3	SM	S	Spic ½	4.08	Bendix	Ross	S 57	Tryon	Alem	18x6.00
Marmon 16	Diam	Del-R	Del-R	Rus	M	3	SM	S	Spic ½	3.78	Bendix	Ross	S 59½	**	Alem	18x7.00
Nash Big Six	Chain	Aut-L	*A-L-S-‡	Borg	O	3	SM-DG-F	O	Own ½	4.70	M	Ross	S 54	ERS	Alem	18x5.25
Nash Stand. Eight	Chain	Aut-L	*A-L-S-‡	Borg	O	3	SM-DG-F	O	Own ½	4.44	M	Ross	S 54	ERS	Alem	18x5.50
Nash Spec. Eight	Chain	*Aut-L	*A-L-S-‡	Borg	O	3	SM-DG-F	O	Own ½	4.43	Bendix	Gem	S 55¾	*	Bijur	17x6.50
Nash Adv. Eight	Chain	*Aut-L	*A-L-S-‡	Borg	O	3	SM-DG-F	O	Own ½	4.50	Bendix	Gem	S 57⅛	*	Bijur	18x7.00
Nash Ambas. Eight	Chain	*Aut-L	*A-L-S-‡	Borg	O	3	SM-DG-F	O	Own ½	4.50	Bendix	Gem	S 57⅛	*	Bijur	18x7.00
Oldsmobile F-32	Chain	Del-R	Del-R	Borg	M	3	SM-DG-F	S	Own ½	4.56	Bendix	Sag	S 54½	Tryon	Al-Z	17x6.00
Oldsmobile L-32	Chain	Del-R	Del-R	Borg	M	3	SM-DG-F	S	Own ½	4.77	Bendix	Sag	S 54½	Tryon	Al-Z	17x6.00
Packard Twin Six	Morse	Aut-L	*Dyn	*Long	O	3	SMF	M	Own ½	4.69	*M	Own	S 60½	Own	Bijur	18x7.50
Packard Stan. 8	Morse	NE	*Dyn	Long	O	3	SM	M	Own ½	4.66	M	Own	S 60½	Own	Bijur	19x6.50
Packard De L. 8	Morse	NE	*Dyn	Long	O	3	SM	M	Own ½	4.66	M	Own	S 60½	Own	Bijur	19x7.00
Packard Light 8	Morse	NE	*Dyn	*Long	O	3	SMF	S	Own ½	4.66	M	Own	S 56	Own	Alem	17x6.50
Pierce-Arrow 54	Chain	Del-R	*Del-R-S	Long	O	3	SM-WG-F	S	Own ½	4.42	Bendix	Ross	S 61	Faf	Myers	18x6.50
Pierce-Arrow 52	Chain	Del-R	*Del-R-S	Long	O	3	SM-WG-F	S	Own ½	4.42	Bendix	Ross	S 61	Faf	Myers	18x7.00
Pierce-Arrow 53	Chain	Del-R	*Del-R-S	Long	O	3	SM-WG-F	S	Own ½	4.58	Bendix	Ross	S 61	Faf	Myers	18x7.00
Plymouth	Var	Del-R	Del-R	†Own	O	3	O-F	O	Own ½	4.33	H	Own	S 53⅜	——	Al-Z	18x5.25
Pontiac 6	Chain	Del-R	Del-R	Own	M	3	SM-BW-F	M	Own ½	4.55	Bendix	Sag	S 54	Inlox	Al-Z	18x5.25
Pontiac V-8	Link	Del-R	Del-R	Own	M	3	SM-BW-F	M	Own ½	4.22	Bendix	Sag	S 54½	Inlox	Al-Z	17x6.00
Reo Fly. Cloud "S"	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.60	H	Ross	S 55	Tryon	Al-Z	17x5.50
Reo Royale Cust.	Morse	Del-R	Del-R-‡	Long	O	3	SHG	U	Own ½	4.07	H	Ross	S 57½	Own	Far	18x6.50
Reo Royale	Morse	Del-R	Del-R-‡	Long	O	3	SHG	U	Own ½	4.07	H	Ross	S 57½	Own	Al-Z	18x6.50
Reo 8-25	Link	Del-R	*Del-R	Long	O	3	SHG	U	Own ½	4.90	H	Ross	S 55¾	Own	Al-Z	17x6.50
Rockne 6-65	Morse	Aut-L	*Aut-L-S	Borg	WG	3	SM-BW-F	M	Spic ½	4.55	Bendix	Ross	S 54	Tryon	Al-Z	18x5.25
Rockne 6-75	Chain	Aut-L	*Aut-L-S	Long	WG	3	SM-BW-F	M	Own ½	4.73	Bendix	Ross	S 54	Tryon	Al-Z	18x5.50
Studebaker 6-55	Chain	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.27	Bendix	Ross	S 54	Tryon	Alem	18x5.50
Studebaker Dict. 62	Cel	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.73	Bendix	Ross	S 54	Tryon	Alem	18x5.50
Studebaker Com. 71	Cel	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.73	Bendix	Ross	S 56	Faf	Alem	18x6.00
Studebaker Pres. 91	Var-G	Del-R	*Del-R-S	Borg	O	3	SM-BW-F	S	Own ½	4.31	Bendix	Ross	S 60	Faf	Alem	18x6.50
Stutz LAA	Link	Del-R	Del-R	Borg	U	4	——	U	Sal ½	5.10	H	Gem	S 60	Own	Bijur	19x6.50
Stutz SV-16	Link	Del-R	Del-R	Long	M	3	SM	M	Tim ½	4.75	H	Gem	S 62¾	Own	Bijur	*18x7.00
Stutz DV-32	Link	Del-R	Del-R	Long	M	3	SM	M	Tim ½	4.50	H	Gem	S 62¾	Own	Bijur	*18x7.00
Willys-Over. 6-90 A	Link	Aut-L	*Aut-L-S	Own	O	3	SM-F	S	Own ½	4.60	Bendix	Own	S 51	Tryon	Alem	18x5.25
Willys-Over. 8-88 A	Link	Aut-L	*Aut-L-S	Borg	O	3	SM-F	S	Own ½	4.40	Bendix	Ross	S 56	Tryon	Alem	18x5.50
Willys-Knight 66E	Link	Aut-L	*Aut-L-S	Rock	O	3	SM-F	S	Own ½	4.18	Bendix	Ross	S 56	Tryon	Alem	17x6.00

KEY TO ABBREVIATIONS

Weight — ‡Austin standard 2 passenger coupe. Stutz DV 145-inch wheel base weighs 5,352. †Tudor sedan.

Engine make—Con. Continental; Lyc Lycoming. *Air-cooled with spot temperature control. †Thermo syphon water circulation. ‡Floating power.

Thermostat—Bish-Bab, Bishop & Babcock, Dole Dole Valve Co., Chicago, Ill.; Ful, Fulton Co.; Har, Harrison; Pines, Pines Winterfront.

Valve arrangement—L, L head; H, horizontal; O, overhead; K, sleeve valve; HO, Horizontal Opposed

Piston Material—*Alum, aluminum with invar struts. Alum, aluminum alloy CI cast iron. Lo-Ex, Aluminum Corporation of America.

Oil Purifier—Han, Handy; AC, AC Spark Plug Company; Flo, Floato; Cuno, Cuno Engineering Corp.; Pur, Purolator. †Using AC with Floato attachment. **Using both AC and Purolator.

Fuel Cleaner—AC, AC Spark Plug Co.; Ste, Stewart-Warner; Til, Tillotson; V-S, an Sicklen

Carburetor—Sch, Wheeler Schebler; Zen, Zenith; Mar, Marvel; Car, Carter; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; B&B, Ball & Ball; *Designed by Chrysler, made by Carter Carburetor Company.

Air Cleaner—AC, AC Spark Plug Company; AM, Air Maze; Un, United; Til, Tillotson.

Front End Drive—Link, Link Belt; Tex, Texolite; Cel, Celeron; Diam, Diamond Chain; Morse, Morse Chain Company; Var, various makes of chains; Var-G, various makes of gears.

Ignition, Generator and Starter—Aut-L, Auto-Lite; A-L, Auto-Lite; Del-R, Delco-Remy; Dyn, Owen-Dyneto Corp.; N E, North East.

*Nash.—Indicates twin ignition. *Bendix starter used. S—Startix equipped. ‡Startix optional equipment.

Clutch—Borg, Borg & Beck; Br-L, Brown-Lipe; Rock, Rockford Machine; Long, Long Clutch Company; Rus, Russell Mfg. Co. *Bendix Clutch Control. †Automatic clutch optional at additional cost.

Transmission Make—D, Detroit Gear; WG, Warner Gear Company; M, Muncie Gear Company; O, Own; W, Warner Corp.

Transmission Type—DG, Detroit Gear & Machine Co.; LGS, The LGS Corp.; F, Free Wheeling; SM, Synchro Mesh; BW Borg-Warner; WG, Warner Gear Co.; SHG, Synchronized Herringbone Gear; O, Own.

Universals—U, Detroit Universal Products; S, Spicer Mfg. Corp.; O, Own; M, Mechanics Universal Joint Company. *Cord using Detroit Universal Products and Mechanical Universal Joint Co.

Rear Axle—Col, Columbia; Sal, Salisbury, Spic, Spicer Mfg. Corp.; Tim, Timken; ½, Semi-flotation; ¾, ¾ floating; F, full floating. ‡Adams used on custom models.

Ratio—*Dual ratio optional; †Hudson 132-in. wheel base models have rear axle ratio of 5.10.

Brakes — H, hydraulic; M, mechanical; Bendix, Bendix Brake Corp. *Equipped with Vacuum Booster

Steering Gear—Gem, Gemmer; Ross, Ross Gear and Tool Company; Sag, Saginaw; Say-B, Saylor-Beall Manufacturing Company; W, Warner Corp.; †Ross used on custom models.

Rear Springs — S, semi-elliptic; El, full elliptic; Cant, semi-cantilever; S-Tr, semi-transverse.

Spring Shackles — Tryon, Willys-Morrow Company; Rub B, Rubber Shock Insulator Company; Faf, Fafnir Bearings Company; ERS, Eaton Products, Inc.; Inlox, Inland Mfg. Co. *Own, front. ERS, rear. **Using both Rubber-B and Fafnir.

Chassis Lubricator—Alem, Alemite; Al-Z, Alemite Zerk; Bijur, Bijur Lubricating Corp.; Far, Farval. Myers • Chassis Lubricating Co.

Tires—Auburn 8 custom models equipped with 17x6.00. *Hudson 132-in. wheel base models equipped with tires 17x6.50. Stutz 145-inch wheelbase models have 20x7.00 tires.

CARBOLOY ANNOUNCES COST SAVING PLAN

A new plan to reduce the cost of Carboloy cemented carbide metal cutting tools is being announced by the Carboloy Company, Inc., of Detroit, Mich. The plan is known as their "milled and brazed service."

Milled and brazed Carboloy tools are the same as the regular finished tool, except that they require a small amount of grinding to put into operation. By taking advantage of this service, the user can obtain Carboloy tools at less than the regular finished tool price and save a large part of the difference in cost.

Although the "milled and brazed service" has just been announced, it has been in use for an extended period of time by a number of representative plants and the economical results obtained indicate that it can be profitably adopted by both large and small cemented carbide users.

WASHER AND GASKET CUTTER

The Rex Metal Products Company, New York city, is placing on the market the Rex washer and gasket cutter for the automotive maintenance shop.

It is claimed that this tool cuts perfect hashers in any diameter from one-half to eight inches in size. It can be quickly adjusted to produce any size washer desired, both as to inside or outside diameter. It will, it is stated, cut any material, such as felt, vellumoid, fiber, cork, rubber, etc.

The shop equipped with one of these machines does not have to carry a large stock of washers, since they can be cut as needed. There are no exposed points to make possible cutting of the hands or wrists.

The machine is supplied complete with the following materials: Felt, ¼, ⅜ and ½ inch thic ness and 8 by 12 inches in dimensions; vellumoid, 1/32 and 1/16 thick, 8 by 12, and cork 8 by 12.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

70

Manufacturers of Automotive Vehicles Equip with

ROSS

Roller Mounted CAM AND LEVER Steering

★

This is the most efficient steering gear ever developed and therefore is the *easiest steering, regardless of the type of tires used.*

★

See Fifth Column to Left

Please see the fifth column to the left, giving steering gear information. Notice the outstanding Ross predominance. This preference for Ross exists not only in the passenger car field, but in the truck and bus field and other divisions of the automotive industry as well. Passenger Car figures are:

ROSS 26

First Competitor 19

Second Competitor 12

Third Competitor 1

Build their own 12

206 Engineering Staffs Prefer Ross

Frames, Heat-Treated Vs. Non-Heat-Treated

(Continued from Page 5)

while an attempt is usually made to keep this down to the minimum, if the designer ignores this condition entirely the side rail dimensions could, of course, be decreased, and if heat-treated alloy steel were used the side rail life would be prolonged and perhaps breakage eliminated. This is, of course, purely speculative, but it is not possibly to employ very thin sections, regardless of whether heat-treated or non heat-treated side rail material is used, because the thin edges tend to shear the bolts or rivets and the slightest looseness will bring about elongation of the side rail rivet or bolt holes.

The accepted method—in fact, the only known method—by which frame side rail strengths may be compared is to calculate and compare their section moduli. This is a measure of the strength of a body subjected to either bending or torsion. Section modulus pertaining to bending is known as plain section modulus; that pertaining to torsion is called polar section modulus. Section modulus is used for direct maximum stress computations in bending or torsion and it takes into account all dimensional differences; consequently, the ability of two side rails to withstand bending or torsional loads may be compared directly by their section moduli irrespective of the side rail depths, thicknesses, flange widths, etc. Assuming that two side rails are dimensionally alike, one made from heat-treated alloy steel and the other from untreated carbon steel, the section modulus will be identical in both cases. This is merely another way of saying that the deflection and stress of the side rails will be alike for a given loan.

Briefly, from our viewpoint, the disadvantages of either heat-treated alloy steel or carbon side rail stock are:

(a) The side rails are necessarily long, and, since they must be taken out of the furnace in a highly heated condition, they must be extremely carefully handled to avoid bending. It is quite a problem to do this and at the same time provide for rapid and uniform quenching. Any lack of uniformity in the heat treatment will, of course, produce disastrous results.

(b) Heat-treated frame side rails must be straightened after quenching, and if excessive bending or distortion has taken place and any considerable degree of straightening is required, weakness may result.

(c) Heat treatment tends to form cracks in the side rails or to enlarge other minute defects which will, in turn, cause localization of stress, with resultant short life. Heat-treated side rails must be very closely examined for such defects. Obviously, however, the presence of minute cracks, etc., is very difficult to discover.

(d) Due to the hardness of heat-treated side rails, the drilling of additional holes is rendered difficult. This is an objectionable feature in connection with the application of special equipment.

(e) Side rails frequently become bent as a result of collisions. If they are heat treated, in most instances they cannot be straightened cold, and the application of local heat will nullify the value of the heat treatment. Worse still, a condition will almost certainly be encountered where a bad metal structure will develop close to a satisfactory grain formation, the result being an early fracture of the side rail.

An improperly heat-treated side rail is much more hazardous from the standpoint of breakage than a non-heat treated carbon steel side rail. However, very few operators appreciate this. In any event, it would be highly impractical to dismantle a vehicle and take a frame completely apart in order that the side rail could be heated and straightened and then reheat-treated.

It should be noted that the grain structure of low carbon non-heat-treated side rail stock is not affected by heating, which means that it may be bent, heated and straightened without any particular hazard.

The frequent reference in this discussion to side rails rather than to frames is due to the fact that cross members are almost invariably made from non-heat-treated carbon steel stock. A very large percentage of the weight and cost of a frame will be found in the side rails — possibly 80 per cent. as a minimum.

In conclusion, to avoid the high operating costs that must necessarily result due to broken, bent or sagging frames, loose cross members or spring brackets, elongated rivet or bolt holes, a general loosening up of the body, etc., it is imperative that a proper stiffness factor be built into the frame. Assuming this is correctly done, side rails of non-heat-treated material will resist the stresses encountered in the frame equally as well as heat-treated carbon or alloy steel rails and none of the disadvantages mentioned above will be experienced.

Portable P. & H. Hansen Arc Welder

A new device in the construction field is the new P&H Hansen gasoline driven arc welder just announced by Harnischfeger Corporation, Milwaukee, Wis.

This has a 300 ampere capacity, with a 42 horsepower gasoline drive unit. The unit is built for quick accessibility and can be hooked onto a truck or car and pulled to the location of the work. Start the gasoline engine, turn a gadget and in a few minutes the repair work can be underway, or welded steel work can be started.

Gas engine driven P&H Hansen arc welders are supplied in the 100, 200, 300, 400 and 600 ampere sizes in the stationary and popular portable types.

Engines of all sizes run at 1,750 r. p. m. Welders are powered with Waukesha engines. These engines are equipped with Ricardo heads, pressure oiling systems and built in governor. A large radiator insures ample cooling capacity. Self-starters eliminate the cranking act.

A flexible coupling joins the arc welding generator to the gas engine. Each generator is equipped with a panel board containing flush type voltmeter and ammeter, and cable terminal studs, with large hand screw clamps. The single control for regulating the welding current, forty and twenty-five volt, is mounted on the commutator end of the generator. If desired, an auxiliary generator (1½ k. w., 120 volt d. c. generator on the 200 and 300 ampere size units, and a 2¼ k. w., 120 volt d. c. generator on the 400 ampere unit) can be furnished. This generator is mounted on end of the welding generator and furnishes current for light and tool operation.

Gasoline engine driven welders are mounted upon an arc welded steel base and completely enclosed. Protective side covers are easily removed, yet are weatherproof and give protection against the elements.

Portable gasoline engine driven welders in the 100, 200, 300 and 400 ampere sizes are mounted upon spring suspension and wire wheels with pneumatic tires. The portable 100 ampere gas engine driven unit can be mounted upon two wheels. Larger sizes are mounted on four wheel units.

FELLOWS GEAR LAPPING MACHINE

The Fellows Gear Shaper Company has developed a new method of finishing gears by lapping after hardening.

This process, it is claimed, in addition to smoothing the contacting profiles of the teeth, also removes slight distortion resulting from heat treatment, producing more accurate, efficient, longer lived and quieter operating gears.

A detailed description and cut of this machine will appear in a forthcoming issue of Automotive Daily News.

No Wonder the Reader Interest Is High

When an advertiser buys space in a publication what he actually is after is reader interest. Get back to fundamentals and understand that reader interest is more important than any other one thing in the selection of media.

Among automotive business papers Automotive Daily News has higher reader interest than any similar paper because:

1. It publishes news of interest to automotive factory officials, dealers and distributors and others, before any other paper.
2. It publishes more news more quickly than any other paper.
3. It covers more different fields than any other paper.
4. It publishes passenger car and truck registrations not only before other publications, but much of the registration material is exclusive.
5. It publishes used car prices exclusively.
6. It covers meetings, conventions, shows and other gatherings of men in the trade from an editorial standpoint and for the benefit of advertisers by means of extra distributions.
7. More features are published in this daily paper in the course of a month than in any other paper published in the automotive field.

High reader interest assures advertisers that no matter when they advertise the readers of Automotive Daily News will see their copy.

HERE'S ECONOMY IN ADVERTISING
ISSUES OF OCT. 4, 5 and 6

Distribution of the three issues 52,000 copies

In addition to copies to be distributed at the Transportation Meeting of the S. A. E. to those in attendance, approximately 8,000 additional copies per day will go by mail to fleet owners, trucks dealers and bus operators. The entire list of 25,000 names (Machol list) will be used for the mail distribution.

Regular advertising rates apply

Automotive Daily News

H. A. TARANTOUS, *Bus. Mgr.* 350 HUDSON STREET, N. Y. C.
DETROIT OFFICE: Geo. M. Slocum, Manager
Fisher Building, Detroit, Mich.
WESTERN OFFICE: Willard R. Cotton, Manager
333 No. Michigan Ave., Chicago, Ill.